SAFETY DATA SHEET

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED

Product name: Zorvec™ Enicade™ Fungicide **Issue Date:** 15.07.2022

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Zorvec™ Enicade™ Fungicide
Identified uses: End use fungicide product

COMPANY IDENTIFICATION
CORTEVA AGRISCIENCE NEW ZEALAND LIMITED
Private Bag 2017
NEW PLYMOUTH 4342
NEW ZEALAND

Customer Information Number: 0800-803-939
NZCustomerservice@corteva.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: +64 6 751 2407
Local Emergency Contact: 0800 844 455

For medical advice, contact the New Zealand Poisons Information Centre:
0800 POISON (0800 764 766)
Transport Emergency Only Dial: 111

This SDS may not provide exhaustive guidance for all the GHS controls assigned to this substance. The NZ EPA website www.epa.govt.nz should be consulted for a full list of triggered controls and cited regulations.

2. HAZARDS IDENTIFICATION

Hazard classification
NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Notice 2017, and the Hazardous Substances (Classification) Notice 2017. Refer to Section 15 for EPA Approval Number.

GHS classifications:
Skin irritation - Category 2
Skin sensitisation - Category 1
Designed for biocidal action

Hazard pictograms

Signal word: **WARNING!**

Hazard statements
Causes skin irritation.
May cause an allergic skin reaction.
Toxic to aquatic life.

Prevention
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before re-use.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Collect spillage.

Storage
Store in a well-ventilated place. Keep cool.

Disposal
Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CASRN	Concentration
Oxathiapiprolin	1003318-67-9	10.2 %
Balance	Not available	89.8 %

4. FIRST AID MEASURES

Consult the National Poisons Information Centre (0800 POISON (0800 764 766)) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

Description of first aid measures
General advice: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. Consult a physician after significant exposure. Artificial respiration and/or oxygen may be necessary.

Skin contact: Take off contaminated clothing and shoes immediately. Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before re-use.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. If eye irritation persists, consult a specialist.

Ingestion: Call a physician or poison control centre immediately. Do not induce vomiting without medical advice. If victim is conscious: Rinse mouth with water. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Treat symptomatically.

5. FIREFIGHTING MEASURES

Hazchem code: •3Z

Suitable extinguishing media: Water spray, Dry chemical, Foam, Carbon dioxide (CO2).

Unsuitable extinguishing media: High volume water jet, (contamination risk).

Special hazards arising from the substance or mixture
Hazardous combustion products: No information available.

Unusual Fire and Explosion Hazards: No information available.

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. On small fires: If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray. Do not allow run-off from fire-fighting to enter drains or water courses. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire-fighting clothing (includes fire-fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Evacuate personnel to safe areas. Thoroughly ventilate area. Wear suitable personal protective equipment and self-contained breathing apparatus. Refer to section 7: Handling, for additional precautionary measures. For additional information, refer to Section 8: Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12: Ecological Information.

Methods and materials for containment and cleaning up: Prevent further leakage or spillage. Contain spilled material if possible. Soak up with inert non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite. Sweep up or vacuum up spillage and collect in suitable container for disposal. Never return spills in original containers for re-use. Dispose of wastes in an approved waste disposal facility. Large spills: Large spills should be collected mechanically (remove by pumping) for disposal. Collect leaking liquid in sealable (metal/plastic) containers. Contact Corteva Agriscience for further clean-up assistance. See Section 13: Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Keep away from heat and sources of ignition. Avoid contact with eyes, skin, and clothing. Avoid breathing spray mist. Wash hands thoroughly after handling. When using do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. See Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place, out of direct sunlight. Store in original container. Keep container tightly closed in a well ventilated place. Keep locked up. Keep out of reach of children. Do not store with feed, seeds or foodstuffs. Do not re-use empty container.

This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 1,000 L or more, either alone or in aggregate with other hazardous substances. See Hazardous Substances Emergency Management and Identification Regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist:

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls
Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures
Eye/face protection: Use safety glasses (with side shields).

Hand protection: Use chemical resistant elbow length gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Other protection: Opening the container, preparing and using spray: Wear cotton overalls buttoned to neck and wrist, and a washable hat. Goggles, face shield, or safety glasses.
All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated. End users of this product should follow label instructions for personal protection when using this product.
Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator.
The following should be effective types of air-purifying respirators: Organic vapour cartridge with a particulate pre-filter

Other Information: Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:
AS/NZS 1336: Eye and Face protection - Guidelines.
AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications.
AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment.
AS/NZS 2161: Occupational protective gloves.
AS/NZS 2210: Occupational protective footwear.
AS/NZS 4501: Occupational protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance - Physical state	Liquid.
- Colour	Off-white
Odour	Oily characteristic
Odour Threshold	No information available
pH	6.5 (1% solution in water)
Melting point/range	No information available
Freezing point	No information available
Boiling point (760 mmHg)	No information available
Flash point - closed cup	>80 °C
Evaporation Rate (Butyl Acetate = 1)	No information available
Flammability (solid, gas)	No information available
Lower explosion limit	No information available
Upper explosion limit	No information available
Vapour Pressure	No information available
Relative Vapour Density (air = 1)	No information available
Density	0.99 g/cm3
Water solubility	Insoluble.
Partition coefficient: n-octanol/water	No information available

Auto-ignition temperature	335 °C
Decomposition temperature	No information available
Kinematic Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	The product is not oxidizing.
Molecular weight	No information available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No information available.

Chemical stability: The product is chemically stable under recommended conditions of storage, use and temperature. No decomposition if stored and applied as directed.

Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use. Polymerization will not occur.

Conditions to avoid: Elevated temperature.

Incompatible materials: No materials to be especially mentioned.

Hazardous decomposition products: No information available.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute oral toxicity
For the product: LD50/Rat: 5,000 mg/kg .

Acute dermal toxicity
For the product: LD50/Rat: > 5,000 mg/kg.

Acute inhalation toxicity
For the product: LC50/4 h/Rat (dust/mist): > 5.0 mg/l. The substance or mixture has no acute inhalation toxicity.

Skin corrosion/irritation
For the product: Rabbit. Skin irritation.

Serious eye damage/eye irritation
For the product: Rabbit. No eye irritation.

Sensitization
For product: Guinea pigs. Buehler Test. May cause sensitisation by skin contact.

Specific Target Organ Systemic Toxicity (Single Exposure)
For the active, Oxathiapiprolin: The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active, Oxathiapiprolin: Oral/Rat: No toxicologically significant effects were found.
Oral/Dog: No toxicologically significant effects were found.
Oral/Mouse: No toxicologically significant effects were found.

Carcinogenicity
For the active, Oxathiapiprolin: Animal testing did not show any carcinogenic effects.

Reproductive toxicity
For the active, Oxathiapiprolin: No toxicity to reproduction. Slight delays in maturation observed in rats.

Teratogenicity:
For the active, Oxathiapiprolin: Animal testing showed no developmental toxicity.

Mutagenicity
For the active, Oxathiapiprolin: Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.

Aspiration Hazard
As product: The mixture does not have properties associated with aspiration hazard potential.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute and prolonged toxicity to fish
As product: LC50/96 h/*Oncorhynchus mykiss* (rainbow trout): > 10 mg/l.

Toxicity to aquatic plants
As product: EbC50/72 h/*Pseudokirchneriella subcapitata* (green algae): 3.5 mg/l.

Acute toxicity to aquatic invertebrates
As product: static test/EC50/48 h/*Daphnia* (water flea): 9.62 mg/l.

Chronic toxicity to aquatic Invertebrates
Oxathiapiprolin: Flow through test: NOEC / 32 d / *Americamysis bahia* (mysid shrimp): 0.058 mg/l. Internal study report.

Persistence and degradability
Oxathiapiprolin: Not readily biodegradable.

Bioaccumulative potential
No information available.

Mobility in Soil
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Do not re-use empty containers. Triple rinse containers. Add rinsing's to spray tank. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture, and bury empty containers in a local authority landfill. If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Notice 2017. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

14. TRANSPORT INFORMATION

PUBLIC PASSENGER VEHICLE TRANSPORT: Not to be transported in passenger vehicles

Classification for ROAD and Rail transport:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxathiapiprolin)
UN number	UN 3082
Class	9
Packing group	III

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxathiapiprolin)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Oxathiapiprolin
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxathiapiprolin)
UN number	UN 3082
Class	9
Packing group	III

Hazchem code: •3Z

Further information

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

ACVMG APPROVAL NUMBER: P9225
EPA Approval Code: HSR101125

Health and Safety at Work (HSW) Controls

ADVICE TO PRODUCT USERS REGARDING GHS CONTROLS: Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations, and the Health and Safety at Work Act for relevant risk management controls. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Refer to Environment Protection Authority for more information http://www.epa.govt.nz

16. OTHER INFORMATION

Revision
Identification Number: / A157 / Issue Date: 15.07.2022 / Version: Replaces 11.10.2021
Code: B13124414
Sections amended: 1, 15, 16

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS -

Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

CORTEVA AGRISCIENCE NEW ZEALAND LIMITED urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.