

Safety Data Sheet

Vivando M Fungicide

Revision date : 2023/03/04
Version: 10.0

Page: 1/13
(30738711/SDS_CPA_US/EN)

1. Identification

Product identifier used on the label

Vivando M Fungicide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, fungicide

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF Agricultural Solutions US LLC
2 TW Alexander Drive
Research Triangle Park, NC 27713
USA

Telephone: +1 973 245-6000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Other means of identification

Substance number:	364446
Registration number:	EPA Registration number: 7969-412
Molecular formula:	C19 H21 Br O5
Synonyms:	metrafenone

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Eye Dam./Irrit.

2B

Serious eye damage/eye irritation

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04

Version: 10.0

Page: 2/13

(30738711/SDS_CPA_US/EN)

Aquatic Acute 3
Aquatic Chronic 1

Hazardous to the aquatic environment - acute
Hazardous to the aquatic environment - chronic

Label elements

Signal Word:
Warning

Hazard Statement:

H320 Causes eye irritation.
H402 Harmful to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P273 Avoid release to the environment.
P264 Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391 Collect spillage.
P337 + P313 If eye irritation persists: Get medical attention.

Precautionary Statements (Disposal):

P501 Dispose of contents/container in accordance with local regulations.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

metrafenone

CAS Number: 220899-03-6
Content (W/W): 25.2 %
Synonym: Methanone, (3-bromo-6-methoxy-2-methylphenyl)(2,3,4-trimethoxy-6-methylphenyl)

D-Glucopyranose, oligomers, decyl octyl glycosides

CAS Number: 68515-73-1
Content (W/W): 15.0 - 50.0%
Synonym: No data available.

Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts

CAS Number: 68425-94-5
Content (W/W): ≥ 5.0 - $< 7.0\%$
Synonym: Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts

1,2-benzisothiazol-3(2H)-one

CAS Number: 2634-33-5
Content (W/W): $< 0.1\%$
Synonym: No data available.

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 3/13
(30738711/SDS_CPA_US/EN)

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention.

If on skin:

Wash thoroughly with soap and water

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:

Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:

foam, dry powder, carbon dioxide, water spray

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, hydrogen bromide, nitrogen oxides, sulfur oxides, halogenated compounds, silica compounds

The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 4/13
(30738711/SDS_CPA_US/EN)

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for safe handling

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

No special precautions necessary. The substance/product is non-combustible. Product is not explosive.

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 5/13
(30738711/SDS_CPA_US/EN)

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed. Protect from temperatures below: 0 °C
Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.
Protect from temperatures above: 40 °C
Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

No substance specific occupational exposure limits known.

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 6/13
(30738711/SDS_CPA_US/EN)

eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	liquid
Odour:	aliphatic
Odour threshold:	Not determined due to potential health hazard by inhalation.
Colour:	beige
pH value:	approx. 6 - 8 (20 °C)
Melting temperature:	approx. 0 °C Information applies to the solvent.
Boiling point:	approx. 100 °C Information applies to the solvent.
Flash point:	A flash point determination is unnecessary due to the high water content.
Flammability:	not applicable
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Autoignition:	approx. 379 °C The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.
SADT:	> 75 °C
Vapour pressure:	approx. 23 hPa (20 °C) Information applies to the solvent.
Density:	approx. 1.19 g/cm ³ (20 °C) approx. 9.9310 Lb/USg (77 °F)
Vapour density:	not applicable
Partitioning coefficient n-octanol/water (log Pow):	not applicable
Thermal decomposition:	160 °C, 20 kJ/kg (DSC (OECD 113)) (onset temperature) 210 °C, 60 kJ/kg (DSC (OECD 113)) (onset temperature) 290 °C, 430 kJ/kg (DSC (OECD 113)) (onset temperature) Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 7/13
(30738711/SDS_CPA_US/EN)

Viscosity, dynamic:	616 mPa.s (20 °C)
Solubility in water:	dispersible
Evaporation rate:	not applicable
Other Information:	The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Not an oxidizer.

not fire-propagating

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

See SDS section 7 - Handling and storage.

Incompatible materials

strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:

160 °C, 3 K/min (DSC (OECD 113))
(onset temperature)

210 °C, 3 K/min (DSC (OECD 113))
(onset temperature)

290 °C, 3 K/min (DSC (OECD 113))
(onset temperature)

Not a substance liable to self-decomposition according to UN transport regulations, class 4.1.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 8/13
(30738711/SDS_CPA_US/EN)

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Oral

Type of value: LD50
Species: rat (male/female)
Value: > 5,000 mg/kg
No mortality was observed.

Inhalation

Type of value: LC50
Species: rat (male/female)
Value: > 3.1 mg/l
Exposure time: 4 h
No mortality was observed.

Dermal

Type of value: LD50
Species: rat (male/female)
Value: > 5,000 mg/kg

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion

Assessment of irritating effects: Eye contact causes irritation. Not irritating to the skin. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Skin

Species: rabbit
Result: non-irritant

Eye

Species: rabbit
Result: Irritant.

Sensitization

Assessment of sensitization: There is no evidence of a skin-sensitizing potential. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Buehler test

Species: guinea pig
Result: Non-sensitizing.

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 9/13
(30738711/SDS_CPA_US/EN)

Mouse Local Lymph Node Assay (LLNA)
Species: mouse
Result: Non-sensitizing.

Aspiration Hazard

No aspiration hazard expected. The product has not been tested. The statement has been derived from the properties of the individual components.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organotoxicity was observed after repeated administration to animals. The product has not been tested. The statement has been derived from the properties of the individual components.

Genetic toxicity

Assessment of mutagenicity: Mutagenicity tests revealed no genotoxic potential. The product has not been tested. The statement has been derived from the properties of the individual components.

Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metrafenone

Assessment of carcinogenicity: When given in high doses, the substance was carcinogenic in animal studies. Based on its mechanism of action, a carcinogenic potential is not expected after exposure to low doses.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect. The product has not been tested. The statement has been derived from the properties of the individual components.

Teratogenicity

Assessment of teratogenicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. The product has not been tested. The statement has been derived from the properties of the individual components.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic invertebrates. Acutely harmful for fish. Acutely toxic for aquatic plants.

Toxicity to fish

LC50 (96 h) > 94 mg/l, *Oncorhynchus mykiss* (OECD Guideline 203, static)

Aquatic invertebrates

EC50 (48 h) 20 mg/l, *Daphnia magna* (OECD Guideline 202, part 1, static)

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 10/13
(30738711/SDS_CPA_US/EN)

Aquatic plants

EC50 (72 h) 21 mg/l (growth rate), algae (OECD Guideline 201, static)

No observed effect concentration (72 h) 0.76 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201, static)

Chronic toxicity to fish

Information on: metrafenone

No observed effect concentration (33 d) 0.204 mg/l, *Pimephales promelas* (OPP 72-4 (EPA-Guideline), Flow through.)

Chronic toxicity to aquatic invertebrates

Information on: metrafenone

No observed effect concentration (28 d) 0.022 mg/l, *Mysidopsis bahia* (Flow through.)

Assessment of terrestrial toxicity

With high probability not acutely harmful to terrestrial organisms.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment biodegradation and elimination (H₂O)

Information on: metrafenone

Not readily biodegradable (by OECD criteria).

Bioaccumulative potential

Assessment bioaccumulation potential

The product has not been tested. The statement has been derived from the properties of the individual components.

Bioaccumulation potential

Information on: metrafenone

Bioconcentration factor: 140 - 180 (42 d), *Lepomis macrochirus* (OECD Guideline 305 E)

Mobility in soil

Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: metrafenone

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 11/13
(30738711/SDS_CPA_US/EN)

Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Additional information

Other ecotoxicological advice:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

The waste codes are manufacturer's recommendations based on the designated use of the product. Other use and special waste disposal treatment on customer's location may require different waste-code assignments. This product is not regulated by RCRA.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Hazard class:

9

Packing group:

III

ID number:

UN 3082

Hazard label:

9, EHSM

Marine pollutant:

YES

Proper shipping name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains METRAFENONE)

Air transport

IATA/ICAO

Hazard class:

9

Packing group:

III

ID number:

UN 3082

Hazard label:

9, EHSM

Proper shipping name:

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (contains METRAFENONE)

Further information

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 12/13
(30738711/SDS_CPA_US/EN)

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
PA	57-55-6	Propylene glycol
NJ	57-55-6	Propylene glycol

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

A risk assessment indicates CA Proposition 65 Safe Harbor criteria are not exceeded when the product is used for agricultural or residential purposes.

NFPA Hazard codes:

Health: 1 Fire: 1 Reactivity: 1 Special:

Labeling requirements under FIFRA

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION:

KEEP OUT OF REACH OF CHILDREN.

KEEP OUT OF REACH OF DOMESTIC ANIMALS.

Causes moderate eye irritation.

Avoid contact with eyes or clothing.

Wash thoroughly with soap and water after handling and before eating, drinking and using tobacco.

16. Other Information

SDS Prepared by:

BASF Agricultural Solutions US NA Product Regulations

SDS Prepared on: 2023/03/04

Safety Data Sheet

Vivando M Fungicide

Revision date: 2023/03/04
Version: 10.0

Page: 13/13
(30738711/SDS_CPA_US/EN)

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET