

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : MIRAVIS

Design code : A19649B

Manufacturer or supplier's details

Company : Syngenta Crop Protection AG

Address : Rosentalstrasse 67, Postfach
CH-4002 Basel
Switzerland

Telephone : +41 61 323 11 11

Emergency telephone number : +44 1484 538444

Telefax : +41 61 323 12 12

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity (Oral) : Category 5

Acute toxicity (Inhalation) : Category 5

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H303 + H333 May be harmful if swallowed or if inhaled.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.

Response:

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

P301 + P304 + P317 IF SWALLOWED OR IF INHALED: Get medical help.
P391 Collect spillage.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|----------------|--------------|-----------------------|
| pydiflumetofen | 1228284-64-7 | >= 10 - < 20 |

4. FIRST AID MEASURES

- General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
- If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.
- In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.
- If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.
- Most important symptoms and effects, both acute and delayed : Nonspecific
No symptoms known or expected.
- Notes to physician : There is no specific antidote available.
Treat symptomatically.

5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

- Alcohol-resistant foam
or
Water spray
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during fire-fighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.
- Specific extinguishing methods : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.
- Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

7. HANDLING AND STORAGE

- Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.
- Conditions for safe storage : No special storage conditions required.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep out of the reach of children.
Keep away from food, drink and animal feedingstuffs.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

| Components | CAS-No. | Value type (Form of | Control parameters / Permissible | Basis |
|------------|---------|------------------------|----------------------------------|-------|
|------------|---------|------------------------|----------------------------------|-------|

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

| | | exposure) | concentration | |
|----------------|--------------|-----------|---------------------|----------|
| pydiflumetofen | 1228284-64-7 | TWA | 5 mg/m ³ | Syngenta |

Engineering measures : Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.

Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Suitable respiratory equipment:

Respirator with a half face mask

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Material : Nitrile rubber

Break through time : > 480 min

Glove thickness : 0,5 mm

Remarks : Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection : No special protective equipment required.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Remove and wash contaminated clothing before re-use.

Wear as appropriate:

Impervious clothing

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.

When selecting personal protective equipment, seek appropriate professional advice.

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|--|---|---|
| Appearance | : | liquid |
| Colour | : | cream to milky white |
| Odour | : | No data available |
| Odour Threshold | : | No data available |
| pH | : | 6,5 Concentration: 1 %w/v |
| Melting point/range | : | No data available |
| Boiling point/boiling range | : | No data available |
| Flash point | : | Method: Pensky-Martens closed cup does not flash |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapour pressure | : | No data available |
| Relative vapour density | : | No data available |
| Density | : | 1,09 g/cm ³ |
| Solubility(ies) | | |
| Water solubility | : | No data available |
| Solubility in other solvents | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |
| Auto-ignition temperature | : | > 650 °C |
| Decomposition temperature | : | No data available |
| Viscosity | | |
| Viscosity, dynamic | : | 80,8 mPa.s (20 - 25 °C) |
| Viscosity, kinematic | : | No data available |

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle size : No data available

10. STABILITY AND REACTIVITY

Reactivity : None reasonably foreseeable.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : No dangerous reaction known under conditions of normal use.

Conditions to avoid : No decomposition if used as directed.

Incompatible materials : None known.

Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Ingestion
Inhalation
Skin contact
Eye contact

Acute toxicity

Product:

Acute oral toxicity : LD50(Rat, female): 2.958 mg/kg

Acute inhalation toxicity : LC50(Rat, male and female): > 3,5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations. , The component/mixture is minimally toxic after short term inhalation.
Remarks: Highest attainable concentration

Acute dermal toxicity : LD50(Rat, male and female): > 5.000 mg/kg

Components:

pydiflumetofen:

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5,11 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is minimally toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat, male and female): > 5.000 mg/kg

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

Skin corrosion/irritation**Product:**

Species : Rabbit
Result : No skin irritation

Components:**pydiflumetofen:**

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation**Product:**

Species : Rabbit
Result : No eye irritation

Components:**pydiflumetofen:**

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation**Product:**

Test Type : Local lymph node assay (LLNA)
Species : Mouse
Result : Did not cause sensitisation on laboratory animals.

Components:**pydiflumetofen:**

Test Type : mouse lymphoma cells
Species : Mouse
Result : Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity**Components:****pydiflumetofen:**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

Carcinogenicity

Components:

pydiflumetofen:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Components:

pydiflumetofen:

Reproductive toxicity - Assessment : No toxicity to reproduction

STOT - single exposure

Components:

pydiflumetofen:

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Components:

pydiflumetofen:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1,4 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,1 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 100 mg/l
Exposure time: 72 h

EC10 (Raphidocelis subcapitata (freshwater green alga)): 13 mg/l
End point: Growth rate
Exposure time: 72 h

NOEC (Raphidocelis subcapitata (freshwater green alga)):

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

0,32 mg/l
End point: Growth rate
Exposure time: 72 h

Components:

pydiflumetofen:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,18 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,42 mg/l
Exposure time: 48 h
- LC50 (Hyalella azteca (Amphipod)): 0,12 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : ErC50 (Raphidocelis subcapitata (freshwater green alga)): > 5,9 mg/l
Exposure time: 72 h
- EC10 (Raphidocelis subcapitata (freshwater green alga)): 2,3 mg/l
End point: Growth rate
Exposure time: 72 h
- ErC50 (Navicula pelliculosa (Freshwater diatom)): 1,6 mg/l
Exposure time: 72 h
- EC10 (Navicula pelliculosa (Freshwater diatom)): 0,97 mg/l
End point: Growth rate
Exposure time: 72 h
- Toxicity to fish (Chronic toxicity) : NOEC: 0,025 mg/l
Exposure time: 32 d
Species: Pimephales promelas (fathead minnow)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,042 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Persistence and degradability

Components:

pydiflumetofen:

- Biodegradability : Result: Not readily biodegradable.
- Stability in water : Degradation half life: 236 d
Remarks: Persistent in water.

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

Bioaccumulative potential

Components:

pydiflumetofen:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3,8 (25 °C)

Mobility in soil

Components:

pydiflumetofen:

Distribution among environmental compartments : Remarks: Low mobility in soil.

Stability in soil : Dissipation time: 674 d
Percentage dissipation: 50 % (DT50)
Remarks: Persistent in soil.

Other adverse effects

Components:

pydiflumetofen:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).
This substance is not considered to be very persistent and very bioaccumulating (vPvB).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

14. TRANSPORT INFORMATION

International Regulations

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

UNRTDG

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

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (PYDIFLUMETOFEN)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964
Environmentally hazardous : yes

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PYDIFLUMETOFEN)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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

This Safety Data Sheet contains no country specific regulatory information. It may not meet the regulatory requirements of a specific country.

16. OTHER INFORMATION

Revision Date : 08.05.2023

MIRAVIS

Version 1.0 Revision Date: 08.05.2023 SDS Number: S00043202455 This version replaces all previous versions.

Full text of other abbreviations

Syngenta : Syngenta Occupational Exposure Limit

Syngenta / TWA : Time weighted average

AIIC - Australian Inventory of Industrial Chemicals; 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; TECI - Thailand Existing Chemicals Inventory; 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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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