

SAFETY DATA SHEET

Section 1: IDENTIFICATION

Product Name:	MIRAVIS FLEXI
Design Code:	A21857B
Recommended Use:	Fungicide
Company Details:	Syngenta Crop Protection Limited
Address:	Level 4, 60 Parnell Road, Parnell AUCKLAND 1052 NEW ZEALAND
Telephone number:	(weekdays) 09 306 1500
Emergency Telephone number:	(24 Hours) 0800 734 607
National Poisons & Hazchem Information Centre :	0800 POISON (0800 764 766)

Section 2: HAZARDS IDENTIFICATION

GHS classification:

Flammable liquid:	Category 4
Serious eye damage:	Category 1
Specific target organ toxicity, repeat exposure:	Category 2
Hazardous to the aquatic environment, chronic:	Category 2

GHS label elements:

Hazard pictogram:



Signal word:

DANGER

Hazard statements:

H227 Combustible liquid.
H318 Causes serious eye damage.
H373 May cause damage to organs through prolonged or repeated exposure
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe mist or spray
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P314 Get medical advice/attention if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a Poison Centre or doctor.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Storage:
P403 Store in a well-ventilated place.

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

Other hazards which do not result in classification:

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Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Mixture:

Chemical Identity of ingredients:

Ingredient	CAS no.	Content (% w/w)
pydiflumetofen	1228284-64-7	>= 2.5 - < 10
oxydipropyl dibenzoate	27138-31-4	>= 30 - < 50
calcium dodecylbenzene sulphonate	26264-06-2	>= 2.5 - < 10
2-methylpropan-1-ol	78-83-1	>= 1 - < 10
other ingredients determined not to be hazardous	-	to 100

Section 4: FIRST AID MEASURES

Description of First Aid measures:

General Advice:

For advice contact the National Poisons Centre on 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Obtain medical attention.

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 Doctor or the National Poisons 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 doctor.
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 (if present).
Immediate medical attention is required.

If swallowed:

If swallowed seek medical advice immediately and show the container or label.
DO NOT induce vomiting.

Important symptoms and effects, both acute and delayed:

Symptoms: No symptoms known or expected.

Indication of any immediate medical attention and special treatment needed:

Treatment: There is no specific antidote available.
Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media:

Small fires:
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Large Fires:
Alcohol resistant foam or water spray.

Unsuitable extinguishing media:

Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture:	
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. Flash back possible over considerable distance.
Advice for firefighters:	
Special protective equipment for firefighters:	Wear full protective clothing and self-contained breathing apparatus.
Further information:	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	
	Refer to protective measures listed in Sections 7 and 8. Keep people away from and upwind of spill/leak. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Remove all sources of ignition. Pay attention to flashback.
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 material 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.
Reference to other sections:	Refer to disposal considerations listed in Section 13. Refer to protective measures listed in sections 7 and 8.

Section 7: HANDLING AND STORAGE

Precautions for Safe handling:	
Advice on safe handling:	Avoid contact with skin and eyes. When using do not eat, drink or smoke. Use only in an area containing flame proof equipment. Take precautionary measures against static discharges. For personal protection see section 8.
Conditions for safe storage, including any incompatibilities:	
Requirements for storage areas and containers:	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from combustible material. Keep in an area equipped with sprinklers. Keep away from food, drink and animal feeding stuffs. No smoking.
Specific end use(s)	For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits:

Components	CAS No	Exposure limit	Type of exposure limit	Source
pydiflumetofen	1228284-64-7	TWA	5 mg/m ³	Syngenta
2-methylpropan-1-ol	78-83-1	WES-TWA	50 ppm 152 mg/m ³	NZ OEL

Exposure controls

Engineering measures:

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

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 Protection:

Eye protection:

Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

Tightly fitting safety goggles
Face-shield

Hand protection:

Material
Break through time
Glove thickness
Remarks:

Nitrile rubber
> 480 min
0.5 mm
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.

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

Respiratory protection:

No personal respiratory protective equipment normally required.
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Protective measures:

The use technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.
Personal protective equipment should comply with relevant national standards

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance: Liquid
Colour: Yellow
Odour: No data
Odour threshold: No data

pH value	3-7, concentration: 1% w/v
Melting point / freezing point:	No data
Initial boiling point and boiling range:	No data
Flash point:	80°C
	Method: Pensky-Martens closed cup
Flammability:	Combustible liquid
Upper / lower flammability / explosive limits:	No data
Vapour pressure:	No data
Vapour Density:	No data
Density:	1.10 g/cm ³ (20°C)
Solubility in water:	Miscible
Solubility in other solvents:	No data
Partition co-efficient: n-octanol / water:	Pydiflumetofen: log Pow: 3.8 (25°C)
Autoignition temperature	400°C
Decomposition temperature:	No data
Viscosity, kinematic:	No data
Explosive properties:	Not explosive
Oxidising properties:	Not oxidising
Minimum ignition energy:	No data

Section 10: STABILITY AND REACTIVITY

Reactivity:	None reasonably foreseeable
Chemical Stability:	The product is 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.

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity (product)	
Swallowed:	LD ₅₀ >2000 mg/kg (rat, calculated from ingredients)
Dermal absorption:	LD ₅₀ >2000 mg/kg (rat, calculated from ingredients)
Inhaled:	LC ₅₀ (4 h) >5.0 mg/L (rat, calculated from ingredients)
Aspiration hazard:	Not classified
Respiratory irritation:	Not classified
Skin corrosion / irritation:	Not classified as a skin irritant (calculated from ingredients)
Eye damage / irritation:	Classified as an eye irritant (calculated from ingredients)
Respiratory or Skin Sensitisation:	Not classified as a sensitiser (calculated from ingredients)
Chronic / Long Term Effects (active ingredient)	
Germ cell mutagenicity:	Animal testing did not show any mutagenic effects.
Carcinogenicity:	Liver tumours noted in mice that are not relevant to humans.
Reproductive toxicity:	No evidence of adverse effects on sexual function and fertility or on development, based on animal experiments.
Specific Organ toxicity:	Single exposure: The substance or mixture is not classified as specific target organ toxicant, single exposure. Repeated exposure: The substance or mixture is classified as specific target organ toxicant, repeat exposure, Category 2
Narcotic Effects:	Not classified

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity Effects – aquatic (product)	
Acute toxicity to fish:	LC ₅₀ (96 h) = 3.54 mg/L (<i>Oncorhynchus mykiss</i> (rainbow trout))
Toxicity to daphnia and other aquatic invertebrates:	EC ₅₀ (48h) = 2.25 mg/L (<i>Daphnia magna</i> (water flea))
Toxicity to algae:	E _r C ₅₀ (72 h) = 7.12 mg/L (<i>Raphidocelis subcapitata</i> (green algae))
Ecotoxicity Effects – terrestrial (active ingredient unless otherwise specified)	
Toxicity to Birds:	Pydiflumetofen: LD ₅₀ (8 d) = >2000 mg/kg (bobwhite quail)
Toxicity to soil dwelling organisms:	Product: NOEC _{mortality, growth} (56d) = ≥1000 mg/kg soil (earthworms) Product: EC ₅₀ (56 d) = 703 mg/kg soil (earthworms)
Toxicity to Bees:	Product: LD ₅₀ (48 h, oral) = >423 µg product/bee Product: LD ₅₀ (48 h, contact) = >1000 µg product/bee
Persistence and degradability:	
Biodegradability:	Pydiflumetofen: Readily biodegradable
Stability in water:	Pydiflumetofen: Degradation half-life: 236 d. Remark: Persistent in water.
Bioaccumulative potential:	
Bioaccumulation:	Pydiflumetofen: Does not bioaccumulate
Partition coefficient: n-octanol/water:	Pydiflumetofen: Log Pow: 3.8 (25°C)
Mobility in soil:	
Distribution among environmental compartments:	Pydiflumetofen: Low mobility in soil.
Stability in soil:	Pydiflumetofen: Dissipation time: 674 d Percentage dissipation: 50% (DT ₅₀) Remark: Persistent in soil.
Other adverse effects:	
Results of PBT and vPvB assessment (product):	This substance contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 13: DISPOSAL CONSIDERATIONS

Product Disposal:	DO NOT contaminate ponds, waterways or ditches with chemical or used containers. DO NOT dispose of waste into sewer. Dispose of this product only by using according to the label. Otherwise, dispose of waste at an approved landfill or other approved facility that will ensure the substance does not exceed the tolerable exposure limit (TEL) or environmental exposure limit (EEL), where relevant, or will treat the substance so that it is rendered no longer hazardous.
Container Disposal:	Ensure the container is empty. Triple rinse empty container and add rinsate to the spray tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.

Section 14: TRANSPORT INFORMATION

Rail / Road (NZS 5433)	UN-No:	3082
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (pydiflumetofen)

Sea (IMDG-Code)	UN-No:	3082
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (pydiflumetofen)
	EmS Code:	F-A, S-F
	MARINE POLLUTANT:	Yes
Air (IATA)	UN-No:	3082
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (pydiflumetofen)
	Packing instruction:	Y964 (cargo and passenger aircraft)

Section 15: REGULATORY INFORMATION

HSNO Approval Number:	HSR101580
Tolerable Exposure Limit or Environmental Exposure Limit:	TEL: none set at this time. EEL: none set at this time.
Required Regulatory Controls:	
Certified handler:	No
Tracking:	No
Record Keeping:	No
ACVM Registration:	P 9894
ACVM Controls:	See www.foodsafety.govt.nz for registration conditions.
International Agreements related to the substance (eg, Montreal Protocol, Stockholm Convention or Rotterdam Convention):	Not applicable

Section 16: OTHER INFORMATION

Date of SDS Preparation / Review:	21 May 2024
Version number of SDS:	1.0
Key / Legend to abbreviations and acronyms used: 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; CPR - Controlled Products Regulations; 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; 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 ActivityRelationship; 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;	

ICAO - International Civil Aviation Organization;	TCSI - Taiwan Chemical Substance Inventory;
IECSC - Inventory of Existing Chemical Substances in China;	TDG - Transportation of Dangerous Goods;
IMDG - International Maritime Dangerous Goods;	TSCA - Toxic Substances Control Act (United States);
IMO - International Maritime Organization;	UN - United Nations;
ISHL - Industrial Safety and Health Law (Japan);	UNRTDG - United Nations Recommendations on the
ISO - International Organisation for Standardization;	Transport of Dangerous Goods;
KECI - Korea Existing Chemicals Inventory;	vPvB - Very Persistent and Very Bioaccumulative;
LC50 - Lethal Concentration to 50 % of a test population;	WES – Workplace Exposure Standard (Worksafe NZ)
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose);	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 test.

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