

Safety Data Sheet

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BASF Safety Data Sheet

Date / Revised: 13.12.2023

Version: 2.0

Product: **REVYLUTION®**

(Ref ID no. 30784054/SDS_CPA_NZ/EN; Version 1.0)

1. Identification

Product identifier

REVYLUTION®

Recommended uses and restrictions on use (if any)

Recommended use:

crop protection product, fungicide.

Restricted use:

Use according to label.

Manufacturer / Supplier

BASF New Zealand Limited
5E City Works Depot,
77 Cook Street
Auckland 1010
NEW ZEALANDPhone: + 64 9 255 4300
0800 932 273

E-mail address: reception@basf-nz.co.nz

Emergency telephone number

National Poisons Centre: 0800 764 766
BASF Emergency Advice Number: 0800 944 955 (24 hour advice in an emergency only)

2. Hazard Identification

Classification of the substance or mixture

Acute inhalation toxicity	:	Category 4
Skin irritation	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3
Specific target organ toxicity - repeat exposure	:	Category 2
Aquatic environment - chronic	:	Category 1

GHS Label Elements, including Precautionary Statements:

Signal Word:

WARNING.

Pictograms:GHS Hazard Statements

- H333 : May be harmful if inhaled.
 H315 : Causes skin irritation.
 H335 : May cause respiratory irritation.
 H373 : May cause damage to organs (kidneys) through prolonged or repeated exposure.
 H410 : Very toxic to aquatic life with long lasting effects.

GHS Precautionary Statements (Prevention)

- P103 : Read label before use.
 P260 : Do not breathe mist, vapours and spray.
 P261 : Avoid breathing mist, vapours and spray.
 P264 : Wash hands and face thoroughly after handling.
 P271 : Use only outdoors or in a well-ventilated area.
 P280 : Wear protective gloves, protective clothing, eye/face protection.

GHS Precautionary Statements (Response)

- P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
 P304 + P312 : IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
 P304 + P340; P312 : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
 P314 : Get medical advice / attention if you feel unwell.
 P321 : Specific treatment (see supplemental first aid instructions on this label).
 P332 + P313 : If skin irritation occurs: Get medical advice/attention.
 P362 : Take off contaminated clothing and wash before re-use.
 P391 : Collect spillage.

GHS Precautionary Statements (Storage)

- P405 : Store locked up
 P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.

GHS Precautionary Statements (Disposal):

- P501 : Dispose of contents/container to hazardous or special waste collection point.
 Information regarding disposal considerations can be found in section 13.

Other hazards

No other hazards known.
 See section 12 - Results of PBT and vPvB assessment.

To avoid risks to human health and the environment, comply with the instructions for use.
 If applicable, information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition/Information on Ingredients**Substances**

Not applicable

MixturesHazardous ingredients (GHS)

According to UN GHS criteria

Mefentrifluconazole		
Content (W/W):	10.07 %	
CAS Number:	1417782-03-6	
Decanamide, N,N-dimethyl-		
Content (W/W):	<40 %	
CAS Number:	14433-76-2	
Alcohols, C12-18, ethoxylated propoxylated		
Content (W/W):	<25 %	
CAS Number:	69227-21-0	
2-Propenoic acid, 2-methyl-, polymer with tert-Bu acrylate, Me methacrylate, polyethylene glycol methacrylate C16-18-alkyl ethers and vinylpyrrolidone, tert-Bu 2-ethylhexaneperoxoate-initiated, compds. with 2-amino-2-methyl-1-propanol		
Content (W/W):	<15 %	
CAS Number:	151872-09-9	
Solvent naphtha		
Content (W/W):	<15 %	
CAS Number:	64742-94-5	
Methyl-Oxirane, Blockpolymer with Oxirane, Monoisotridecyl ether		
Content (W/W):	<10 %	
CAS Number:	196823-11-7	
2-pyrrolidone		
Content (W/W):	<0.25 %	
CAS Number:	616-45-5	

4. First-Aid Measures

Description of necessary first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

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

On skin contact:

Immediately wash thoroughly with soap and water.

On contact with eyes:

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

On ingestion:

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 labelling 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

Treatment:

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

Medical advice:

Contact the National Poisons and Hazardous Chemicals Information centre.
Phone 0800 POISON (0800 764 766).

5. Fire-Fighting Measures

Suitable extinguishing media

Water spray, dry powder, foam, carbon dioxide

Specific hazards

carbon monoxide, carbon dioxide, hydrogen chloride, hydrogen fluoride, nitrogen oxides, halogenated compounds, sulfur oxides, silica compounds

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

Vapours may form ignitable mixture with air. Prevent electrostatic charge – sources of ignition should be kept well clear – fire extinguishers should be kept handy.

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus and chemical-protective clothing.

Precautions for fire-fighters

In case of fire and/or explosion do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

Personal precautions, Protective equipment and Emergency procedures

Do not breathe vapour/spray.
Use personal protective clothing.
Avoid contact with the skin, eyes and clothing.

Environmental precautions

Do not discharge into the subsoil/soil.
Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For small amounts: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

For large amounts: Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Collect waste in suitable containers, which can be labelled and sealed. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Wear suitable protective equipment.

7. Handling and Storage

Precautions for safe handling

No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Conditions for safe storage, including any incompatibilities

Segregate from foods and animal feeds.

Further information on storage conditions:

Keep away from heat. Protect from direct sunlight.

Storage stability: 24 months.

Protect from temperatures below -10°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**Control parameters**Occupational exposure limits

Component:	solvent naphtha
CAS Number:	64742-94-5
TWA Value:	200 mg/m ³ Non-aerosol (source: ACGIHTLV) Measured as: total hydrocarbon vapor Application restricted to conditions in which there are negligible aerosol exposures.
Skin Designation:	Danger of cutaneous absorption, Non-aerosol (source: ACGIHTLV) Measured as: total hydrocarbon vapor
Component:	Naphthalene, 1-methyl-,
CAS Number:	90-12-0
TWA Value:	0.5 ppm (source: ACGIHTLV)
Skin Designation:	Danger of cutaneous absorption
Component:	Naphthalene, 2-methyl-,
CAS Number:	91-57-6
TWA Value:	0.5 ppm (source: ACGIHTLV)
Skin Designation:	The substance can be absorbed through the skin (source: ACGIHTLV)
Skin Designation:	Danger of cutaneous absorption (source: ACGIHTLV)
Component:	Mefentrifluconazole
CAS Number:	1417782-03-6
TWA Value:	0.68 mg/m ³ (source: BASF recomm. occupational exposure limit)

Engineering controls

Maintain air concentrations below occupational exposure standards.

Personal protective equipmentRespiratory protection:

Suitable respiratory protection for lower concentrations or short -term effect: Combination filter for gases/vapours of organic, inorganic, acid inorganic and alkaline compounds (e.g. EN 14387 Type ABEK-P3).

Hand protection:

Suitable chemical resistant safety gloves (EN 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.

Eye protection:

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

The statements on personal protective equipment in the instructions for use apply when handling crop-protection agents in final-consumer packing. Wearing of closed work clothing is recommended. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	Liquid
Colour:	Yellow, clear
Odour:	Fish-like
Odour threshold:	Not determined due to potential health hazard by inhalation
pH value:	Approx. 5.5 – 7.5 (20°C)
Freezing point:	Approx. -7°C
Boiling point:	Information applies to the solvent. Approx. 291°C Information applies to the solvent.
Flash point:	128°C
Evaporation rate:	Not applicable
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.
Ignition temperature:	Approx. 375°C
Vapour pressure:	Approx. 1 hPa (20°C) Information applies to the solvent
Density:	Approx. 0.99 g/cm ³ (20°C)
Relative vapour density (air):	Not applicable
Solubility in water:	Soluble
Partitioning coefficient n-octanol/water (log Pow):	Not applicable
Thermal decomposition:	No decomposition if stored and handled as prescribed / indicated.
Explosion hazard:	Not explosive
Fire promoting properties:	Not fire-propagating
Viscosity, dynamic:	Approx. 82 mPa.s (20°C, 100 1/s)
Viscosity, kinematic:	35 mm ² /s (40°C)

10. Stability and Reactivity

Reactivity

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

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.

Thermal decomposition: No decomposition if stored and handled as prescribed / indicated.

Incompatible materials / Substances to avoid

Strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

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

11. Toxicological Information

Acute toxicityAssessment of acute toxicity:

Virtually non-toxic after single ingestion. Virtually non-toxic after a single skin contact. Virtually non-toxic after short-term inhalation.

Experimental/calculated data:

LD50 rat (oral): >2,000 mg/kg
No mortality was observed.

LC50 rat (by inhalation): >2.4 - <5.4 mg/l 4 h
An aerosol was tested.

LD50 rat (dermal): >5,000 mg/kg
No mortality was observed.

Skin Corrosion / IrritationAssessment of irritating effects:

Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant

Serious Eye Damage / IrritationAssessment of irritating effects:

Not irritating to the eyes.

Experimental/calculated data:

Serious eye damage/irritation rabbit: non-irritant.

Respiratory or Skin sensitizationAssessment of sensitization:

Sensitization after skin contact possible. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: Mefentrifluconazole

Experimental/calculated data:

Guinea Pig Maximisation Test: Skin sensitizing.

Information on: 2-Propenoic acid, 2-methyl-, polymer with tert-Bu acrylate, Me methacrylate, polyethylene glycol methacrylate C16-18-alkyl ethers and vinylpyrrolidone, tert-Bu 2-ethylhexaneperoxoate-initiated, compds, with 2-amino-2-methyl-1-propanol

Experimental/calculated data:

In vitro assay: Skin sensitizing.

Germ cell mutagenicity

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 results of various animal studies gave no indication of a carcinogenic effect. The product has not been tested. The statement has been derived from the properties of the individual components.

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.

Developmental toxicity

Assessment of teratogenicity:

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

Information on: N,N-Dimethyldecan-1-amide

Assessment of teratogenicity:

The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-pyrrolidone

Assessment of teratogenicity:

Causes developmental effects in animals at high, maternally toxic doses. Due to the low potency of 2-Pyrrolidone, a Specific Concentration Limit (SCL) of 3% was derived for developmental toxicity

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

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

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

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

Information on: Mefentrifluconazole

Assessment of repeated dose toxicity:

Repeated oral exposure to large quantities may affect certain organs; liver. Based on available data, the classification criteria are not met.

Information on: N,N-Dimethyldecan-1-amide

Assessment of repeated dose toxicity:

After repeated exposure the prominent effect is local irritation. The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-pyrrolidone

Assessment of repeated dose toxicity:

The substance may cause damage to the kidney after repeated ingestion of high doses, as shown in animal studies.

Aspiration hazard

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

Other relevant toxicity information

Misuse can be harmful to health.

12. Ecological Information

Ecotoxicity - Aquatic

Assessment of aquatic toxicity:

Very toxic to aquatic life with long lasting effects.

Toxicity to fish:

LC50 (96 h): 0.52 mg/l, *Oncorhynchus mykiss*

NOEC (36 d): 0.027 mg ai/l, *Brachydanio rerio*, Mefentrifluconazole

Aquatic invertebrates:

EC50 (48 h): 1.8 mg/l, *Daphnia magna*

NOEC (21 d): 0.01 mg/l, *Daphnia magna*, Revysol Fungicide

EC10 (21 d): 0.0175 mg/l, *Daphnia magna*, Revysol Fungicide

Aquatic plants:

EC50 (72 h): 8.45 mg/l (growth rate), *Pseudokirchneriella subcapitata*

Ecotoxicity - Terrestrial

Assessment of terrestrial toxicity:

Not classified as hazardous to terrestrial vertebrates. The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to birds:

Acute oral LD50: 816 mg ai/kg bw, Bobwhite Quail, Mefentrifluconazole

Toxicity to soil organisms:

Acute LC50 (14d): >500 mg ai/kg, *Eisenia fetida*, Mefentrifluconazole

Toxicity to Pollinators:

LD50 (48h, oral): >100 µg ai/bee, *Apis mellifera*, Mefentrifluconazole

LD50 (48h, contact): >100 µg ai/bee, *Apis mellifera*, Mefentrifluconazole

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.

Information on: Mefentrifluconazole

Assessment biodegradation and elimination (H2O):

Not readily biodegradable.

Bioaccumulative potential

Assessment bioaccumulation potential:

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

Information on: Mefentrifluconazole

Bioaccumulation potential:

Bioconcentration factor: 385

Does not accumulate in organisms.

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: Mefentrifluconazole

Assessment transport between environmental compartments:

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

Results of PBT and vPvB assessment

The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

Other adverse effects

Other ecotoxicological advice:

Do not discharge product into the environment without control.

Do not apply onto or into water.

13. Disposal Considerations

Container:

Triple rinse empty container and add rinsate to the spray tank. Recycle through Agrecovery (0800 247 326, www.agrecovery.co.nz). Do not use container for any other purpose.

Product:

Dispose of this product only by using according to the label or at an approved facility. Do NOT burn product. Do NOT contaminate water with product or used container.

Waste product/package may be sent to a suitable incineration plant, observing local regulations.

Contaminated Packaging:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance / product.

14. Transport Information

Commercial transport:

Classified as dangerous good(s) for Land/rail (ADR/RID), sea (IMDG) and air transport (ICAO/IATA):

Land / Rail / Road (ADR/RID):

UN number:	UN 3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains triazole derivative, solvent naphtha)
Transport hazard class(es) / UN DG Class:	9, (EHSM)
Packing group:	III
Environmental hazards:	Marine pollutant
HAZCHEM:	3Z
IERG Number:	47
Special precautions when transporting the substance:	None known

Sea transport (IMDG):

UN number:	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains triazole derivative, solvent naphtha)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	marine pollutant
Marine pollutant:	Yes
Special precautions when transporting the substance:	EmS: F-A; S-F

Air transport (IATA / ICAO):

UN number:	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains triazole derivative, solvent naphtha)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	Yes, marine pollutant
Special precautions when transporting the substance:	None known

Additional Information:

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**HSNO Approval Number**

HSR101534

See www.epa.govt.nz for approval conditions.**Tolerable Exposure Limit or Environmental Exposure Limit**

TEL: None set

EEL: None set

Relevant Regulatory Requirements

Qualifications:	Required. Refer to label
Certified Handler:	Not required
Tracking:	Not required
Record Keeping:	Required. Refer to label
Restricted to Workplace:	Not applicable
Controlled substance licence:	Not required

ACVM Registration

P009923

See www.foodsafety.govt.nz/acvm for registration conditions.

International Agreements related to the substance such as Montreal Protocol, the Stockholm Convention or Rotterdam Convention

not applicable

16. Other Information

Date of preparation of the SDS

13 December 2023

Key or legend to abbreviations and acronyms used

ACGIH	The American Conference of Governmental Industrial Hygienists
ACVM	Agricultural Compounds and Veterinary Medicines
ADN	International Carriage of Dangerous Goods by Inland Waterways (EU)
ADR/RID	Dangerous Goods for Road / Rail
DG	Dangerous Goods
EC50	Median effective concentration
EEL	Environmental Exposure Limit
EHSM	Environmental Health and Safety Management
EPA	Environmental Protection Authority
EU	European Union
GHS	Globally Harmonised System
ICAO	International Civil Aviation Organisation
IATA	International Air Transport Association
IERG	International Emergency Response Guide
IMDG	International Maritime Dangerous Goods
LD50	Lethal concentration to 50% of the test population
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OEL	Operator Exposure Limits
PBT or vPvP	Persistent / Bioaccumulative / Toxic or very Persistent / very Bioaccumulative
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
TDG	Transportation of Dangerous Goods
TEL	Tolerable Exposure Limit
TLVs	Threshold Limit Values
UN GHS	United Nations Globally Harmonised System
WES	Workplace Exposure Standards
49CFR	Code of Federal Regulations Title 49 for Transportation

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.