

SAFETY DATA SHEET



Artist

Version 3 / NZ
102000007487

1/12

Revision Date: 17.07.2024
Print Date: 17.07.2024

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name Artist
Product code (UVP) 05167620

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use Herbicide
EPA-Nr. HSR101359

1.3 Details of the supplier of the safety data sheet

Supplier Bayer New Zealand Limited
CropScience Division
B:HIVE Building
74 Taharoto Rd
Smales Farm
Takapuna
Auckland, 0622
New Zealand

Telephone 0800 428 246
Telefax (09) 441 8645

1.4 Emergency telephone no.

Emergency Number 0800 734 607 (24hr)
Global Incident Response
Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Notice 2020 as amended

Acute Tox. 4
H302 Harmful if swallowed.
H332 Harmful if inhaled.

Skin Sens. 1
H317 May cause an allergic skin reaction.

STOT RE 2
H373 May cause damage to organs through prolonged or repeated exposure.

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Aquatic Chronic 1

H410 Very toxic to aquatic life with long lasting effects.

Hazardous to soil organisms

H421 Very toxic to the soil environment.

Hazardous to terrestrial vertebrates

H433 Harmful to terrestrial vertebrates.

2.2 Label elements

Labelling in accordance with the Hazardous Substances (Safety Data Sheets) Notice 2020 as amended

Hazard label for supply/use required.



Signal word: Warning

Hazard statements

H302 + H332 Harmful if swallowed or if inhaled.

H317 May cause an allergic skin reaction.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

H421 Very toxic to the soil environment.

H433 Harmful to terrestrial vertebrates.

Precautionary statements

P102 Keep out of reach of children.

P103 Read label before use.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P330 Rinse mouth.

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

2.3 Other hazards

May form explosible dust-air mixture if dispersed.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Water dispersible granules (WG)

Flufenacet/Metribuzin 24,0:17,5 % w/w

Hazardous components

Chemical name	CAS-No.	Conc. [%]
Flufenacet	142459-58-3	24.00
Metribuzin	21087-64-9	17.50

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Naphthalene and alkyl naphthalene sulphonic acids formaldehyde condensate, sodium salt	68425-94-5	$\geq 10.0 - < 20$
Alkyl naphthalenesulfonic acid, polymer with formaldehyde, sodium salt	68425-94-5	$\geq 3.0 - < 10.0$
Citric acid	77-92-9	$\geq 1.0 - < 3.0$
Synthetic amorphous silica	112926-00-8	> 1.0
Kaolin	1332-58-7	> 1.0

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice	Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.
Inhalation	Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.
Skin contact	Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Rinse mouth. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	The absorption of this product into the body may lead to the formation of methaemoglobine that, in sufficient concentration, causes cyanosis. Shortness of breath, Drowsiness, Headache, Tiredness, Dizziness, Nausea Symptoms and hazards refer to effects observed after intake of significant amounts of the active ingredient(s).
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4.3 Indication of any immediate medical attention and special treatment needed

Risks	Danger of formation of methaemoglobin.
Treatment	Treat symptomatically. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. In case of methaemoglobinemia, oxygen and specific antidotes (methylene blue/ toluidine blue) should be given.

Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

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SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Carbon monoxide (CO), Nitrogen oxides (NO_x), Sulphur oxides
Accumulation of fine dust may entail the risk of a dust explosion in the presence of air.

5.3 Advice for firefighters

Special protective equipment for firefighters In the event of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and protective suit.

Further information Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Avoid dust formation. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment. Remove all sources of ignition.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Avoid dust formation. Use mechanical handling equipment. Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Avoid dust formation. Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion Dust may form explosive mixture in air. Keep away from heat and sources of ignition.

Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes

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separately. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Keep away from direct sunlight. Protect from frost.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

Suitable materials Combination of sheet metal and HDPE (high density polyethylene)
HDPE (high density polyethylene)

7.3 Specific end use(s) Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Flufenacet	142459-58-3	0.3 mg/m ³ (SK-SEN)		OES BCS*
Synthetic amorphous silica	112926-00-8	10 mg/m ³ (TWA)	06 2016	NZ OEL
Kaolin (Respirable dust.)	1332-58-7	2 mg/m ³ (TWA)	07 2011	NZ OEL
Kaolin (Inhalable dust.)	1332-58-7	10 mg/m ³ (TWA)	07 2011	NZ OEL
Metribuzin	21087-64-9	5 mg/m ³ (TWA)	2002	NZ OEL
Metribuzin	21087-64-9	0.36 mg/m ³ (SK-SEN)		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

Wear respirator with a particle filter mask (protection factor 20) conforming to European Norm EN149FFP3 or EN140P3 or equivalent.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

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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.

Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Protective index	Class 6
Directive	Protective gloves complying with EN 374.

Eye protection	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
Skin and body protection	Wear standard coveralls and Category 3 Type 4 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.
General protective measures	If product is handled while not enclosed, and if contact may occur: Complete suit protecting against chemicals

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	water-dispersible granules
Colour	light brown
Odour	weak, characteristic
Odour Threshold	No data available
pH	3.0 - 4.0 (1 %) (23 °C) (deionized water)
Melting point/range	No data available
Boiling Point	No data available
Flash point	No data available
Flammability	The product is not highly flammable.
Auto-ignition temperature	No data available
Thermal decomposition	from 190 °C Heating rate:5 K/min Decomposition energy:87 kJ/kg,
Ignition temperature	279 °C
Minimum ignition energy	300 - 1,000 mJ
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available

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Lower explosion limit	No data available
Dust explosion class	capable of causing a dust explosion (modified Hartmann tube)
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	No data available
Bulk density	ca. 0.68 g/ml (bulk density tapped)
Water solubility	dispersible
Partition coefficient: n-octanol/water	Flufenacet: log Pow: 3.2 Metribuzin: log Pow: 1.6
Viscosity, dynamic	No data available
Viscosity, kinematic	Not applicable
Impact sensitivity	Not impact sensitive.
Burning number	3 CN3 Local combustion without spreading (20 °C)
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
Dust content	
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	Incapable of deflagration No dangerous reaction known under conditions of normal use.
10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (Rat) > 500 - < 2,000 mg/kg
Acute inhalation toxicity	Inhalation is no relevant route of exposure for this formulation. No volatility, no aerosols under normal conditions.
Acute dermal toxicity	LD50 (Rat) > 2,000 mg/kg
Skin corrosion/irritation	No skin irritation (Rabbit)
Serious eye damage/eye irritation	Irritating to eyes. (Rabbit) The information is derived from the properties of the individual components.
Respiratory or skin sensitisation	Skin: Sensitising (Guinea pig) OECD Test Guideline 406, Magnusson & Kligman test Skin: Non-sensitizing. (Guinea pig) OECD Test Guideline 406, Buehler test

Assessment STOT Specific target organ toxicity – single exposure

Flufenacet: Based on available data, the classification criteria are not met.
Metribuzin: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Flufenacet caused neurobehavioral effects and/or neuropathological changes in animal studies.
Metribuzin caused specific target organ toxicity in experimental animal studies in the following organ(s):
Liver, Kidney.
Metribuzin: May cause damage to organs (Blood system) through prolonged or repeated exposure.

Assessment mutagenicity

Flufenacet was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Metribuzin was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity

Flufenacet was not carcinogenic in lifetime feeding studies in rats and mice.
Metribuzin was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Flufenacet did not cause reproductive toxicity in a two-generation study in rats.
Metribuzin caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Metribuzin is related to parental toxicity.

Assessment developmental toxicity

Flufenacet caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Flufenacet are related to maternal toxicity.
Metribuzin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Metribuzin are related to maternal toxicity.

Aspiration hazard

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Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties

Assessment The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)) 5.84 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient flufenacet.
LC50 (Oncorhynchus mykiss (rainbow trout)) 74.6 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient metribuzin.

Toxicity to aquatic invertebrates EC50 (Daphnia magna (Water flea)) 30.9 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient flufenacet.
EC50 (Daphnia magna (Water flea)) 49.6 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient metribuzin.

Toxicity to aquatic plants ErC50 (Raphidocelis subcapitata (freshwater green alga)) 0.06059 mg/l
Exposure time: 72 h

12.2 Persistence and degradability

Biodegradability Flufenacet:
Not rapidly biodegradable
Metribuzin:
Not rapidly biodegradable

Koc Flufenacet: Koc: 202
Metribuzin: Koc: 24 - 106

12.3 Bioaccumulative potential

Bioaccumulation Flufenacet: Bioconcentration factor (BCF) 71
Does not bioaccumulate.
Metribuzin:
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil Flufenacet: Moderately mobile in soils
Metribuzin: Mobile in soils

12.5 Results of PBT and vPvB assessment

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PBT and vPvB assessment Flufenacet: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Metribuzin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Endocrine disrupting properties

Assessment The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Additional ecological information No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.

Contaminated packaging Triple rinse containers. Recycle if possible. If allowed under local authority, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

SECTION 14: TRANSPORT INFORMATION

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

ADR/RID/ADN

14.1 UN number	3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (FLUFENACET, METRIBUZIN MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazchem Code	2Z

IMDG

14.1 UN number	3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (FLUFENACET, METRIBUZIN MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Marine pollutant	YES

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IATA

14.1 UN number	3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (FLUFENACET, METRIBUZIN MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to IMO instruments

No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

Further information

HSNO approval-Nr.	HSR101359
HSNO Controls	See www.epa.govt.nz
ACVM Reg.	P9555
ACVM Condition	See www.foodsafety.govt.nz

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level

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MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.

Reason for Revision:

The following sections have been revised: Section 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 11: Toxicological information on STOT (Specific Target Organ Toxicity) and CMR (Carcinogenic, Mutagenic and toxic to Reproduction). Section 13. Disposal considerations.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.