

Safety Data Sheet

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BASF Safety Data Sheet

Date / Revised: 25.08.2023

Version: 1.0

Product: **FRONTIER®-P**

(Ref. ID no. 30782804/SDS_CPA_00/EN).

1. Identification

Product identifier

FRONTIER®-P

Recommended uses and restrictions on use (if any)

Recommended use:

crop protection product, herbicide.

Restricted use:

not applicable

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 oral toxicity	:	Category 4
Eye irritation	:	Category 2
Skin sensitization	:	Category 1
Carcinogenicity	:	Category 2
Aquatic environment – acute	:	Category 1
Aquatic environment - chronic	:	Category 1
Hazardous to soil organisms	:	
Hazardous to terrestrial vertebrates	:	

GHS Label Elements, including Precautionary Statements:

Signal Word:

WARNING.

Pictograms:



GHS Hazard Statements

H302	: Harmful if swallowed.
H319	: Causes serious eye irritation.
H317	: May cause an allergic skin reaction.
H351	: Suspected of causing cancer.
H400	: Very toxic to aquatic life.
H411	: Very toxic to aquatic life with long lasting effects.
	: Hazardous to soil organisms.
	: Hazardous to terrestrial vertebrates.

GHS Precautionary Statements (Prevention)

P102	: Keep out of reach of children.
P103	: Read label before use.
P201	: Obtain special instructions before use.
P202	: Do not handle until all safety precautions have been read and understood.
P264	: Wash hands and face thoroughly after handling.
P270	: Do not eat, drink or smoke when using this product.
P272	: Contaminated clothing should not be allowed out of the workplace.
P280	: Wear protective gloves, protective clothing, eye/face protection.
P281	: Use personal protective equipment as required.

GHS Precautionary Statements (Response)

P101	: If medical advice is needed, have product container or label at hand.
P301+P312	: IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
P330	: Rinse mouth.
P302+ P352	: IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	: IF exposed or concerned: Get medical advice/attention.
P333 + P313	: If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	: If eye irritation persists: Get medical advice/ attention.
P363	: Wash contaminated clothing before reuse.
P391	: Collect spillage.

GHS Precautionary Statements (Storage)

P405	: Store locked up
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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.
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According to UN GHS criteria

Hazard determining component(s) for labelling: dimethenamid-P

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.

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

Not applicable

MixturesHazardous ingredients (GHS)

According to UN GHS criteria

dimethenamid-P

Content (W/W): 64 %
 CAS Number: 163515-14-8

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Content (W/W): <30%
 CAS Number: 64742-94-5

Naphthalene, 2-methyl-

Content (W/W): <15%
 CAS Number: 91-57-6

Naphthalene, 1-methyl-

Content (W/W): <10%
 CAS Number: 90-12-0

POE (6) Tridecyl ether phosphate, reaction product with POE (5) soya amine

Content (W/W): <10%
 CAS Number:

Oxirane, methyl-, polymer with oxirane, monobutyl ether

Content (W/W): <5%
 CAS Number: 9038-95-3

biphenyl

Content (W/W): <3%
 CAS Number: 92-52-4

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:

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, hydrogen chloride, carbon dioxide, nitrogen oxides, organochloric compounds, sulfur oxides, phosphorus oxides

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.

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: 60 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:	biphenyl
CAS Number:	92-52-4
TWA Value:	0.2 ppm (source: ACGIHTLV)
TWA Value:	0.2 ppm / 1.3 mg/m ³ (source: WES 2022)

Component:	solvent naphtha
CAS Number:	64742-94-5
TWA Value:	200 mg/m ³ (source: ACGIHTLV); Non-aerosol Measured as: total hydrocarbon vapor. Application restricted to conditions in which there are negligible aerosol exposures.

Skin designation, Non-aerosol	Danger of cutaneous absorption. (source: ACGIHTLV), Measured as: total hydrocarbon vapor.
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Component: Naphthalene, 1-methyl-
 CAS Number: 90-12-0
 TWA Value: 0.5 ppm (source: ACGIHTLV)
 Skin designation: Danger of cutaneous absorption. (source: ACGIHTLV)

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)

Engineering controls

Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Respiratory protection:

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

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): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) and other.

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: Brown
 Odour: aromatic
 Odour threshold: Not determined due to potential health hazard by inhalation
 pH value: Approx. 2 – 4 (1% (m), 20°C)
 Melting point: The product has not been tested.
 Boiling point: Approx. 122.6°C (9.3 Pa)
 (Information based on the main components)
 Flash point: Non-flammable
 Evaporation rate: Not applicable
 Flammability (solid / gas): Not applicable
 Lower explosion limit: Approx. 0.6% (V)
 (Information applies to the solvent)

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Upper explosion limit:	Approx. 7.0% (V) (Information applies to the solvent)
Ignition temperature:	Approx. 391°C
Thermal decomposition:	230°C, 370 kJ/kg 380°C, >230 kJ/kg Not a substance liable to self decomposition according to UN transport regulations, Class 4.1
Explosion hazard:	Not explosive
Fire promoting properties:	Not fire-propagating
Vapour pressure:	Approx. <1 mmHg (25°C)
Density:	Approx. 1.13 g/cm ³ (20°C)
Relative vapour density (air):	Not applicable
Solubility in water:	Emulsifiable, insoluble
Partitioning coefficient n-octanol/water (log Kow):	The statements are based on the properties of the individual components. Information on: dimethenamid-P: 1.89
Viscosity, dynamic:	Approx. 43.6 mPa.s (20°C)
Viscosity, kinematic:	22 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: 230°C, 370 kJ/kg

Thermal decomposition: 380°C, >230 kJ/kg

Thermal decomposition: Not a substance liable to self-decomposition according to UN transport regulations, Class 4.1

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 toxicity

Assessment of acute toxicity:

Of moderate toxicity after single ingestion. Virtually non-toxic by inhalation. Virtually non-toxic after a single skin contact. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

LD50 rat (oral):	>500 mg/kg
LC50 rat (by inhalation):	>5.6 mg/l 4 h No mortality was observed.
LD50 rat (dermal):	>5000 mg/kg No mortality was observed.

Skin Corrosion / IrritationAssessment of irritating effects:

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.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant

Serious Eye Damage / IrritationAssessment of irritating effects:

Eye contact causes irritation. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

Serious eye damage/irritation rabbit: Irritant.

Respiratory or Skin sensitizationAssessment of sensitization:

Sensitization after skin contact possible. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

Modified Buehler test guinea pig: caused skin sensitisation in animal studies.

Germ cell mutagenicityAssessment 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.

CarcinogenicityAssessment of carcinogenicity:

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

Reproductive toxicityAssessment 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 toxicityAssessment 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.

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: dimethenamid-P

Assessment of repeated dose toxicity:

Adaptive effects were observed after repeated exposure in animal studies.

Information on: biphenyl

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.

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Toxicity to fish:

LC50 (96 h): 7.94 mg/l, *Oncorhynchus mykiss*

NOEC (90d): 0.120 mg ai/l, *Oncorhynchus mykiss* (dimethenamid-P)

Aquatic invertebrates:

EC50 (48 h) 17.1 mg/l, *Daphnia magna*

NOEC (21 d) 0.680 mg ai/l, *Daphnia magna* (dimethenamid-P)

Aquatic plants:

EC50 (72 h) 0.1327 mg/l (growth rate), *Desmodemus subspicatus*

EC10 (72 h) 0.0245 mg/l (growth rate), *Desmodemus subspicatus*

EC50 (7 d) 0.0085 mg/l (growth rate), *Lemna gibba*

NOEC (7d) 0.003 mg/l (growth rate), *Lemna gibba*

Ecotoxicity - Terrestrial

Assessment of terrestrial toxicity:

Hazardous to terrestrial vertebrates. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition or the active ingredient.

Toxicity to birds:

Acute oral LD50 (8 d): 1068 mg ai/kg bw, (dimethenamid-P)

Toxicity to soil organisms:

LC50 (14d) 596 mg/kg soil, *Eisenia fetida*

Toxicity to Pollinators:

LD50 (48h, oral): >1000 µg ai/bee, *Apis mellifera*, (dimethenamid-P)

LD50 (48h, contact): 94 µg ai/bee, *Apis mellifera*, (dimethenamid-P)

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: dimethenamid-P

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: dimethenamid-P

Bioaccumulation potential: No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

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: dimethenamid-P

Assessment transport between environmental compartments:

Following exposure to soil, the product trickles away and can - dependent on degradation - be transported to deeper soil areas with larger water loads.

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 Dimethenamid-P, solvent naphtha)
Transport hazard class(es) / UN DG Class:	9, (EHSM)
Packing group:	III
Environmental hazards:	Marine pollutant
Marine pollutant:	Yes
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 Dimethenamid-P, solvent naphtha)
Transport hazard class(es):	9, EHSM
Packing group:	III
Environmental hazards:	marine pollutant
Marine pollutant:	Yes
Special precautions when transporting the substance:	None known

Air transport (IATA / ICAO):

UN number:	UN3082
UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains Dimethenamid-P, solvent naphtha)
Transport hazard class(es):	9, EHSM

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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**

HSR100030.

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.
Controlled substance licence:	Not required

ACVM Registration

P007979

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**

25 August 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

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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.