

Safety Data Sheet

Frontier Max Herbicide

Revision date : 2025/01/30
Version: 7.1

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(30459442/SDS_CPA_CA/EN)

1. Identification

Product identifier used on the label

Frontier Max Herbicide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF Agricultural Solutions Canada Inc.
510, 28 Quarry Park Boulevard SE,
Calgary, AB, T2C 5P9
CANADA

Telephone: +1 (403) 523-3000

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300
BASF HOTLINE: (800) 454-COPE (2673)

Other means of identification

Molecular formula: C₁₂ H₁₈ Cl N O₂ S
PCP# 29194
Synonyms: dimethenamid-P

2. Hazards Identification

According to Hazardous Products Regulations (HPR) (SOR/2015-17)

Classification of the product

Asp. Tox.	1	Aspiration hazard
Acute Tox.	4 (oral)	Acute toxicity
Skin Irrit.	2	Skin irritation

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Eye Irrit.	2A	Eye irritation
Skin Sens.	1B	Skin sensitization
Carc.	2	Carcinogenicity
Aquatic Acute	1	Hazardous to the aquatic environment - acute
Aquatic Chronic	1	Hazardous to the aquatic environment - chronic

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H319	Causes serious eye irritation.
H315	Causes skin irritation.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H304	May be fatal if swallowed and enters airways.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P273	Avoid release to the environment.
P201	Obtain special instructions before use.
P261	Avoid breathing mist or vapour or spray.
P280	Wear eye protection.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated body parts thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P308 + P313	IF exposed or concerned: Get medical attention.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical attention.
P330	Rinse mouth.
P391	Collect spillage.
P332 + P313	If skin irritation occurs: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P331	Do NOT induce vomiting.
P337 + P313	If eye irritation persists: Get medical attention.

Precautionary Statements (Storage):

P405	Store locked up.
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Precautionary Statements (Disposal):
P501 Dispose of contents/container in accordance with local regulations.

3. Composition / Information on Ingredients

According to Hazardous Products Regulations (HPR) (SOR/2015-17)

dimethenamid-P

CAS Number: 163515-14-8

Content (W/W): 63.9 %

Synonym: Acetamide, 2-chloro-N-(2,4-dimethyl-3-thienyl)-N-[(1S)-2-methoxy-1-methylethyl]-

naphthalene

CAS Number: 91-20-3

Content (W/W): < 3.0%

Synonym: Naphthalin

solvent naphtha

CAS Number: 64742-94-5

Content (W/W): < 20.0%

Synonym: Solvent naphtha, petroleum, heavy arom.

Naphthalene, 2-methyl-

CAS Number: 91-57-6

Content (W/W): 5.0 - 7.0%

Synonym: No data available.

Naphthalene, 1-methyl-

CAS Number: 90-12-0

Content (W/W): 3.0 - 5.0%

Synonym: No data available.

Unknown POE (6) Tridecyl ether phosphate, reaction product with POE (5) soya amine of BI 000000104545, ATLOX AL-2927

Content (W/W): 3.0 - 5.0%

Synonym: No data available.

Oxirane, methyl-, polymer with oxirane, monobutyl ether

CAS Number: 9038-95-3

Content (W/W): 1.0 - 3.0%

Synonym: Butoxypolyethylen-/Propylenglycol (mittl. MW > 500)

4. First-Aid Measures

Description of first aid measures

General advice:

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. In case of intoxication, call a poison control center or physician for treatment advice, taking the packaging or the label of the product.

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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:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary.

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

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

Immediately wash thoroughly with soap and water, seek medical attention.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

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

If swallowed:

Do not give solids or liquids. Do not induce vomiting unless told to by a poison control center or doctor. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention. Do not induce vomiting due to aspiration hazard.

Most important symptoms and effects, both acute and delayed

Symptoms: aspiration pneumonia

Hazards: Contains petroleum distillates.

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling 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

Note to physician

Treatment: Vomiting may cause aspiration pneumonia due to the ingredients.

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

5. Fire-Fighting Measures

Suitable extinguishing media:
foam, dry powder, carbon dioxide, water spray

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Special hazards arising from the substance or mixture

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, Hydrogen chloride, sulfur oxides, nitrogen oxides, halogenated compounds, Phosphorus compounds

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

Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

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.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy.

Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear.

Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge.

Electrostatic discharge may cause ignition.

Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

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Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.

8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with occupational exposure limits

naphthalene	ACGIH, US: TWA value 10 ppm ; ACGIH, US: Skin Designation ; Danger of cutaneous absorption OSHA Z1: PEL 10 ppm 50 mg/m3 ;
solvent naphtha	ACGIH, US: Skin Designation Non-aerosol (total hydrocarbon vapor); Danger of cutaneous absorption ACGIH, US: TWA value 200 mg/m3 Non-aerosol (total hydrocarbon vapor); Application restricted to conditions in which there are negligible aerosol exposures.
(S)-dimethenamid	TWA value 0.54 mg/m3 ;
Naphthalene, 1-methyl-	ACGIH, US: Skin Designation ; Danger of cutaneous absorption ACGIH, US: TLV-SL 3 mg/100 cm2 ; ACGIH, US: TWA value 0.05 ppm ;
Naphthalene, 2-methyl-	ACGIH, US: TWA value 0.5 ppm ; ACGIH, US: Skin Designation ; The substance can be absorbed through the skin. ACGIH, US: Skin Designation ; Danger of cutaneous absorption ACGIH, US: TLV-SL 3 mg/100 cm2 ; ACGIH, US: TWA value 0.05 ppm ;

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate.

Hand protection:

Chemical resistant protective gloves

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Eye protection:

Safety glasses with side-shields. Wear face shield or tightly fitting safety goggles (chemical goggles) if splashing hazard exists.

Body protection:

light protective clothing

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	aromatic	
Odour threshold:	Not determined due to potential health hazard by inhalation.	
Colour:	dark brown	
pH value:	approx. 2 - 4 (1 %(m), approx. 25 °C)	
Melting point:	The product has not been tested.	
Boiling point:	> 280 °C The data given are those of the active ingredient.	
Flash point:	approx. 105 °C	(Directive 92/69/EEC, A.9)
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.	
Autoignition:	approx. 425 °C	(Directive 92/69/EEC, A.15)
Vapour pressure:	approx. 0.00347 Pa (20 °C) The data given are those of the active ingredient.	
Density:	approx. 1.13 g/cm ³ (20 °C)	(OECD Guideline 109)
Vapour density:	not applicable	

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Partitioning coefficient n-octanol/water (log Pow):	The statements are based on the properties of the individual components.
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.
Viscosity, dynamic:	approx. 16.3 mPa.s (40 °C)
Viscosity, kinematic:	approx. 14.7 mm ² /s (40 °C)
Particle size:	The substance / product is marketed or used in a non solid or granular form.
Solubility in water:	emulsifiable
Evaporation rate:	not applicable
Other Information:	The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

10. Stability and Reactivity

Reactivity

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

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing. (Directive 2004/73/EC, A.21)

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid

Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Incompatible materials

Nitric Acid, Sulfuric acid, strong oxidizing agents

Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: nitrogen oxides, sulfur oxides, aldehydes

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

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11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Slightly toxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Oral

Type of value: LD50
Species: rat (female)
Value: > 500 - < 2,000 mg/kg (OECD Guideline 423)

Inhalation

Type of value: LC50
Species: rat (male/female)
Value: > 5.6 mg/l (OECD Guideline 403)
Exposure time: 4 h

Dermal

Type of value: LD50
Species: rat (male/female)
Value: > 5,000 mg/kg (OECD Guideline 402)

Assessment other acute effects

Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

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

Irritation / corrosion

Assessment of irritating effects: Causes substantial but temporary eye injury. May cause slight irritation to the skin.

Skin

Species: rabbit
Result: Irritant.
Method: OECD Guideline 404

Eye

Species: rabbit
Result: Irritant.
Method: OECD Guideline 405

Sensitization

Assessment of sensitization: Caused skin sensitization in animal studies.

modified Buehler test

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Species: guinea pig
Result: skin sensitizing
Method: OECD Guideline 406

Aspiration Hazard

May also damage the lung at swallowing (aspiration hazard). The product has not been tested. The statement has been derived from the properties of the individual components.

Chronic Toxicity/Effects

Repeated dose toxicity

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: naphthalene

Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The substance may cause damage to the olfactory epithelium after repeated inhalation. Repeated dermal uptake of the substance did not cause substance-related effects.

Genetic toxicity

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

Information on: naphthalene

Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was mutagenic in a mammalian cell culture test system. The substance was not mutagenic in a test with mammals. Literature data.

Carcinogenicity

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

Information on: naphthalene

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was observed. EU-classification The substance was classified as a group 3 carcinogen by the German MAK-Commission (substances for which a suspicion of a carcinogenic potential exists). IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans). IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).

Information on: solvent naphtha

Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Medical conditions aggravated by overexposure

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely toxic for fish. Acutely harmful for aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

Toxicity to fish

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

Aquatic invertebrates

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

Aquatic plants

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

No observed effect concentration (7 d) 0.003 mg/l (growth rate), *Lemna gibba*

EC50 (72 h) 0.1327 mg/l (growth rate), *Desmodium subspicatum*

EC10 (72 h) 0.0245 mg/l (growth rate), *Desmodium subspicatum*

Assessment of terrestrial toxicity

With high probability not acutely harmful to honeybees. With high probability not acutely harmful to terrestrial organisms.

Bioaccumulative potential

Assessment bioaccumulation potential

Information on: dimethenamid-P

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

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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

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

Additional information

Other ecotoxicological advice:

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

13. Disposal considerations

Waste disposal of substance:

Must be disposed of or incinerated in accordance with local regulations.

Container disposal:

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

14. Transport Information

Land transport

TDG

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Hazard class:	9
Packing group:	III
ID number:	UN 3082
Hazard label:	9, EHSM
Marine pollutant:	YES
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains DIMETHENAMID-P, NAPHTHALENE)

Air transport

IATA/ICAO

Hazard class:	9
Packing group:	III
ID number:	UN 3082
Hazard label:	9, EHSM
Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains DIMETHENAMID-P, NAPHTHALENE)

Further information

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Exempt from regulation when transported by road or rail, in accordance with TDG Regulations 1.45.1. This exemption provides that this product does not require dangerous goods shipping documentation or safety marks when transported on land by road or rail. According to Section 1.45.1 of Canada Transportation of Dangerous Goods Regulation, the Documentation and Dangerous Goods Safety Marks requirements do not apply to marine pollutant classified as class 9 if they are transported solely on land by road vehicle or railway vehicle.

15. Regulatory Information

Federal Regulations

Registration status:

Crop Protection DSL, CA released / exempt

Labeling requirements under Pest Control Products Act

Read the label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

This chemical is a pest control product regulated by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. The following is the hazard information required on the pest control product label:



Warning: Poison

WARNING:

Eye irritant.

Potential skin sensitizer.

Contains the allergen soy.

KEEP OUT OF REACH OF CHILDREN.

HARMFUL IF SWALLOWED.

CAUSES SKIN IRRITATION.

May be fatal if swallowed.

Causes eye irritation.

Prolonged or repeated skin contact may cause sensitization or allergic reactions.

Do not get in eyes, on skin, or on clothing.

Avoid inhalation of mists/vapours.

There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label.

16. Other Information

SDS Prepared by:

BASF Agricultural Solutions Canada NA Product Regulations

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We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET