

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 1/10
(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*: 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 SE
67056 Ludwigshafen
GERMANY

Contact address:
BASF Canada Inc.
100 Milverton Drive
Mississauga, ON L5R 4H1
CANADA
Telephone: +1 289 360-1300

Emergency telephone number

CANUTEC (reverse charges): (613) 996-6666
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 Controlled Products Regulations (CPR) (SOR/88-66)

Emergency overview

WARNING:
POISON.
Eye irritant.
Potential skin sensitizer.
Contains the allergen soy.

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 2/10
(30459442/SDS_CPA_CA/EN)

KEEP OUT OF REACH OF CHILDREN.
Harmful if swallowed.
This product is an eye irritant.
This product is a skin irritant and may cause skin sensitization.
Do not get in eyes, on skin, or on clothing.
Avoid inhalation of mists/vapours.

3. Composition / Information on Ingredients

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

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
163515-14-8	<= 64.0%	Acetamide, 2-chloro-N-(2,4-dimethyl-3-thienyl)-N-[(1S)-2-methoxy-1-methylethyl]-
91-20-3	<= 3.0%	naphthalene
64742-94-5	<= 20.0%	solvent naphtha

According to Controlled Products Regulations (CPR) (SOR/88-66)

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
163515-14-8	63.71 %	(S)-dimethenamid
91-20-3	>= 0.1 - <= 1.0%	naphthalene

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. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled:

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

If on skin:

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

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.

If swallowed:

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.

Most important symptoms and effects, both acute and delayed

Symptoms: aspiration pneumonia
Hazards: Contains petroleum distillates.

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 3/10
(30459442/SDS_CPA_CA/EN)

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote. Aspiration of this product during induced emesis can result in lung injury. If evacuation of stomach contents is considered necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation.

5. Fire-Fighting Measures

Extinguishing media

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

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons, nitrogen oxides, sulfur oxides
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a 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

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 4/10
(30459442/SDS_CPA_CA/EN)

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.

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	OSHA PEL	PEL 10 ppm 50 mg/m ³ ; STEL value 15 ppm 75 mg/m ³ ; TWA value 10 ppm 50 mg/m ³ ;
	ACGIH TLV	TWA value 10 ppm ; STEL value 15 ppm ; Skin Designation ; The substance can be absorbed through the skin.

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

Eye protection:

Safety glasses with side-shields.

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

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 5/10
(30459442/SDS_CPA_CA/EN)

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)	
cloud point:	approx. -1.2 °C	
Boiling point:	approx. 204 °C (1,013 hPa)	
Flash point:	Information applies to the solvent. approx. 105 °C	(Directive 92/69/EEC, A.9)
Flammability:	not highly flammable	(Directive 92/69/EEC, A.12)
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. 0.05 hPa (approx. 20 °C)	
Density:	Information applies to the solvent. approx. 1.13 g/cm ³ (approx. 20 °C)	(OECD Guideline 109)
Vapour density:	not applicable	
Thermal decomposition:	carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.	
Viscosity, dynamic:	approx. 16.3 mPa.s (approx. 40 °C)	
Viscosity, kinematic:	approx. 14.7 mm ² /s (40 °C)	
Solubility in water:	emulsifiable	
Evaporation rate:	not applicable	
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

10. Stability and Reactivity

Reactivity

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 6/10
(30459442/SDS_CPA_CA/EN)

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:
Possible thermal decomposition products:
carbon monoxide, carbon dioxide, nitrogen dioxide, nitrogen oxide, Sulphur dioxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons
Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

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

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 7/10
(30459442/SDS_CPA_CA/EN)

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)

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

Species: guinea pig
Result: Caused skin sensitization in animal studies.
Method: OECD Guideline 406

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. No substance-specific organotoxicity was observed after repeated administration to animals.

Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

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

Information on: Dimethenamid-P

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

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).

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 8/10
(30459442/SDS_CPA_CA/EN)

IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).

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.

Symptoms of Exposure

aspiration pneumonia

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.

Aquatic invertebrates

EC50 (48 h) 8.85 mg/l, Daphnia magna (OECD Guideline 202, part 1)

Aquatic plants

EC50 (72 h) 0.63 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201)

Toxicity to fish

Information on: Acetamide, 2-chloro-N-(2,4-dimethyl-3-thienyl)-N-[(1S)-2-methoxy-1-methylethyl]-LC50 (96 h) 6.3 mg/l, Oncorhynchus mykiss

Assessment of terrestrial toxicity

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

Bioaccumulative potential

Bioaccumulation potential

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

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

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 9/10
(30459442/SDS_CPA_CA/EN)

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

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)

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,

Safety Data Sheet

FRONTIER MAX HERBICIDE

Revision date : 2016/06/02
Version: 3.0

Page: 10/10
(30459442/SDS_CPA_CA/EN)

N.O.S. (contains DIMETHENAMID-P)

15. Regulatory Information

Federal Regulations

Registration status:

Chemical DSL, CA released; restriction on quantity / not listed

Crop Protection DSL, CA released / exempt

According to Controlled Products Regulations (CPR) (SOR/88-66)

WHMIS does not apply to this product.

THIS PRODUCT HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CPR AND THE MSDS CONTAINS ALL THE INFORMATION REQUIRED BY THE CPR.

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2016/06/02

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