1. Identification

Product identifier used on the label

Liberty 150 SN 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 CORPORATION
100 Park Avenue
Florham Park, NJ 07932, USA

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

PCP # 28837 + 24081

2. Hazards Identification

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

Emergency overview

WARNING:
POISON.
Eye irritant.
Skin Irritant
KEEP OUT OF REACH OF CHILDREN.
Harmful in contact with skin.
May be fatal if absorbed through skin.
Harmful if swallowed.
Causes eye irritation.
Avoid inhalation of mists/vapours.
Do not get in eyes, on skin, or on clothing.
Wash thoroughly after handling.

3. Composition / Information on Ingredients

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

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Weight %</th>
<th>Chemical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>77182-82-2</td>
<td>13.5 %</td>
<td>Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt</td>
</tr>
<tr>
<td>68891-38-3</td>
<td>44.1 %</td>
<td>Polyethyleneglycolmonoalkylethersulphate, sodium salt</td>
</tr>
<tr>
<td>107-98-2</td>
<td>10.0 %</td>
<td>1-methoxypropan-2-ol</td>
</tr>
</tbody>
</table>

4. First-Aid Measures

Description of 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. Symptoms of poisoning may occur even after several hours, continue medical observation for at least 48 hours after the accident.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:
Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

If in eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:
Do not induce vomiting. Call a poison control center or physician for treatment advice. Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., vomiting, diarrhea, abdominal cramps, tremors, hypotony, unconsciousness, coma, convulsions, respiratory disorders, nausea, rapid heart rate. Symptoms may be delayed for several hours.

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. Medical monitoring for at least 24-48 hours.
5. Fire-Fighting Measures

**Extinguishing media**

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

Unsuitable extinguishing media for safety reasons:
- water jet

**Special hazards arising from the substance or mixture**

Hazards during fire-fighting:
- carbon monoxide, carbon dioxide, hydrogen cyanide, nitrogen oxides, sulfur oxides

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

**Advice for fire-fighters**

Protective equipment for fire-fighting:
- Wear self-contained breathing apparatus and chemical-protective clothing.

**Further information:**
Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. 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**

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. Remove contaminated clothing and protective equipment before entering eating areas.

Protection against fire and explosion:
No special precautions necessary. The substance/product is non-combustible. Product is not explosive.
Conditions for safe storage, including any incompatibilities
Segregate from foods and animal feeds.

Further information on storage conditions: Keep only in the original container. Keep container tightly closed in a cool, well-ventilated place. Keep away from heat. Store protected against freezing. Protect from direct sunlight.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA PEL</th>
<th>TWA value</th>
<th>STEL value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-methoxypropan-2-ol</td>
<td></td>
<td>100 ppm</td>
<td>360 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 ppm</td>
<td>540 mg/m³</td>
</tr>
<tr>
<td>ACGIH TLV</td>
<td></td>
<td>50 ppm</td>
<td>100 ppm</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:
Chemical resistant protective gloves. Protective glove selection must be based on the user’s assessment of the workplace hazards.

Eye protection:
Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

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
Odour: pungent, aromatic
Odour threshold: Not determined due to potential health hazard by inhalation.
Colour: blue to green
pH value: approx. 5.4 - 7.4
(10% (m), 23°C)
(undiluted)
Melting point: approx. 0 °C
Information applies to the solvent.

Boiling point: approx. 101 °C

Flash point:
57 °C
UN L.2 Sustained combustibility The product does not burn self-sustainingly. By analogy with a product of similar composition

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: 455 °C

Vapour pressure: (20 °C)

Density: approx. 1.11 g/cm³ (20 °C)

Vapour density: not applicable

Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt
Partitioning coefficient n-octanol/water (log Pow): < 0.1 (22 °C)

Information on: Polyethyleneglycolmonoalkylethersulphate, sodium salt
Partitioning coefficient n-octanol/water (log Pow): 0.3

Thermal decomposition: > 200 °C

Viscosity, dynamic: not determined

Solubility in water: (20 °C) miscible

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

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.

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 MSDS section 7 - Handling and storage.
Incompatible materials
bases

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: ammonia, No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition:
> 200 °C

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: Of pronounced toxicity after short-term skin contact. Of moderate toxicity after single ingestion. Inhalation is not likely in the available physical form.

Oral
Type of value: LD50
Species: rat (female)
Value: 1,730 mg/kg

Inhalation
Type of value: LC50
Species: rat (male)
Value: 2.97 mg/l
Exposure time: 4 h
The test result applies only to the substance transferred into respirable aerosol (particles < 20 µm).

Dermal
Type of value: LD50
Species: rat (male/female)
Value: 593 mg/kg

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: May cause severe damage to the eyes. Not irritating to the skin.

Skin
Species: rabbit  
Result: non-irritant  

**Eye**  
Species: rabbit  
Result: Risk of serious damage to eyes.  

**Sensitization**  
Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.  

modified Buehler test  
Species: guinea pig  
Result: Non-sensitizing.  

**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: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt*  
Assessment of repeated dose toxicity: Prolonged or repeated exposure may cause neurological disturbances.  

**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. In long-term studies in mice in which the substance was given by feed, a carcinogenic effect was not observed.  

**Reproductive toxicity**  
Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.  

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt*  
Assessment of reproduction toxicity: Causes impairment of fertility in laboratory animals.  

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

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt*  
Assessment of teratogenicity: The substance caused malformations/developmental toxicity in laboratory animals. The substance did not cause malformations in animal studies; however, toxicity to development was observed at doses that were toxic to the parental animals.  

**Other Information**  
Misuse can be harmful to health.  

**Symptoms of Exposure**
12. Ecological Information

**Toxicity**

Aquatic toxicity
Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to fish

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt LC50 (96 h) 461 mg/l, Pimephales promelas*  
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Aquatic invertebrates

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt EC50 (96 h) > 560 mg/l, Daphnia magna*  
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Aquatic plants

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt EC50 (72 h) 1,129 mg/l, Desmodesmus subspicatus*  
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**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.

Assessment biodegradation and elimination (H2O)

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt*  
Not readily biodegradable (by OECD criteria).  
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**Bioaccumulative potential**

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

Bioaccumulation potential

*Information on: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt*
Bioconcentration factor: 0.05 - 0.3 (42 d), Lepomis macrochirus
Does not accumulate in organisms.

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**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: Butanoic acid, 2-amino-4-(hydroxymethylphosphinyl)-, monoammonium salt*

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

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**Additional information**

Other ecotoxicological advice:
Do not discharge product into the environment without control.

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13. Disposal considerations

**Waste disposal of substance:**
Must be sent to a suitable incineration plant, observing local regulations.

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

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14. Transport Information

**Land transport**

TDG
Hazard class: 6.1
Packing group: III
ID number: UN 2902
Hazard label: 6.1
Proper shipping name: PESTICIDE, LIQUID, TOXIC, N.O.S. (contains GLUFOSINATE AMMONIUM SOLUTION)

**Sea transport**

IMDG
Hazard class: 6.1
Packing group: III
ID number: UN 2902
Hazard label: 6.1
Marine pollutant: NO
Proper shipping name: PESTICIDE, LIQUID, TOXIC, N.O.S. (contains GLUFOSINATE AMMONIUM SOLUTION)

**Air transport**

IATA/ICAO
Safety Data Sheet
Liberty 150 SN Herbicide

Hazard class: 6.1
Packing group: III
ID number: UN 2902
Hazard label: 6.1
Proper shipping name: PESTICIDE, LIQUID, TOXIC, N.O.S. (contains GLUFOSINATE AMMONIUM SOLUTION)

15. Regulatory Information

Federal Regulations

Registration status:
Chemical DSL, CA blocked / not listed
Crop Protection DSL, CA released / exempt

16. Other Information

SDS Prepared by:
BASF NA Product Regulations
SDS Prepared on: 2019/01/24

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