

**Material Safety Data Sheet****LIBERTY® 150 SN HERBICIDE**

MSDS Number: 102000021443

MSDS Version 1.1

Revision Date: 01/17/2012

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**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

<b>Product name</b>	LIBERTY® 150 SN HERBICIDE
<b>MSDS Number</b>	102000021443
<b>Product code (UVP)</b>	79461976
<b>PCP Registration No.</b>	28837
<b>Product Use</b>	Herbicide

Bayer CropScience Inc  
#200, 160 Quarry Park Blvd, SE  
Calgary, Alberta T2C 3G3  
Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)  
For Product Information call: 1-888-283-6847

**SECTION 2. HAZARDS IDENTIFICATION**

*NOTE: Please refer to Section 11 for detailed toxicological information.*

**Emergency Overview** Warning! Harmful if swallowed or absorbed through skin. Causes eye irritation. May cause skin irritation. Do not get in eyes, on skin, or on clothing. Avoid breathing spray mist.

**Physical State** liquid

**Odor** aromatic

**Appearance** blue to blue green

**Exposure routes** Skin Absorption, Ingestion, Inhalation, Eye contact

**Immediate Effects**

**Eye** Causes eye irritation. Do not get in eyes.

**Skin** Harmful or fatal if absorbed through the skin. May cause skin irritation. Do not get on skin or clothing.

**Ingestion** Harmful if swallowed. Do not take internally.

**Inhalation** Avoid breathing spray mist.

**Chronic or Delayed Long-Term**

This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.



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**Potential Environmental Effect** Toxic to aquatic organisms. This product may cause adverse effects on non-target plants.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Glufosinate ammonium	77182-82-2	13.50
Alkylethersulfate, sodium salt	68891-38-3	58.50
1-Methoxy-2-propanol	107-98-2	10.00

**SECTION 4. FIRST AID MEASURES**

**General** When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

**Eye** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

**Skin** Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

**Ingestion** Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

**Inhalation** Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

**Notes to physician  
Signs and  
Symptoms**

If large amounts are ingested, the following symptoms may occur:  
Hyperthermia  
Dyspnoea  
Bradycardia  
Ataxia  
Diarrhoea  
Convulsions  
Liver and kidney injuries may occur.  
Respiratory failure

**Hazards**

Ingestion may cause liver damage. Dangerous amounts can be absorbed through the skin. More severe effects if alcohol is consumed. Risk of bronchopneumonia in case of prolonged exposure. Poisoning affects the central nervous system.



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**Treatment**                      Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

**SECTION 5. FIRE FIGHTING MEASURES**

**Flash point**                      57 °C / 135 °F  
 The product does not sustain combustion.

**Autoignition temperature**   455 °C / 851 °F

**Lower Flammability Limit**     no data available

**Upper Flammability Limit**    no data available

**Suitable extinguishing media**    Water spray, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

**Unsuitable extinguishing media**   High volume water jet

**Fire Fighting Instructions**        Keep out of smoke. Fight fire from upwind position. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**            Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

**Methods for cleaning up**        Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

**Additional advice**                 Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.

**SECTION 7. HANDLING AND STORAGE**

**Handling procedures**            Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to



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prevent spillage.

**Storing Procedures**

Keep away from direct sunlight. Protect from freezing.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

**Work/Hygienic Procedures**

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**General Protection**

Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

**Eye/Face Protection**

Safety glasses, in case of increased risk, also a face shield

**Hand protection**

Chemical resistant nitrile rubber gloves

**Body Protection**

Wear long-sleeved shirt and long pants and shoes plus socks.

**Respiratory protection**

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

**Exposure Limits**

Glufosinate ammonium	77182-82-2	OES BCS*	TWA	0.9 mg/m3
1-Methoxy-2-propanol	107-98-2	OEL (QUE)	TWA	100 ppm
		OEL (QUE)	STEL	150 ppm
		CAD AB OEL	TWA	100 ppm
		CAD AB OEL	STEL	150 ppm
		CAD BC OEL	TWA	50 ppm
		CAD BC OEL	STEL	75 ppm
		CAD ON OEL	TWAEV	100 ppm
		CAD ON OEL	STEV	150 ppm
		OEL (QUE)	TWA	100 ppm



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OEL (QUE)

STEL

150 ppm

\*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	blue to blue green
<b>Physical State</b>	liquid
<b>Odor</b>	aromatic
<b>pH</b>	5.4 - 7.4 (10 %) at 23 °C
<b>Vapor Pressure</b>	no data available
<b>Vapor Density (Air = 1)</b>	no data available
<b>Density</b>	1.11 g/cm <sup>3</sup> at 20 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	ca. 99 °C / 210 °F at 1.013 hPa
<b>Melting / Freezing Point</b>	no data available
<b>Water solubility</b>	at 20 °C: miscible
<b>Minimum Ignition Energy</b>	no data available
<b>Decomposition temperature</b>	> 200 °C
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Viscosity</b>	no data available

## SECTION 10. STABILITY AND REACTIVITY

<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight.
<b>Incompatibility</b>	Strong oxidizing agents Acids Bases
<b>Hazardous</b>	Thermal decomposition

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<b>Decomposition Products</b>	Ammonia
<b>Hazardous reactions</b>	No hazardous reactions when stored and handled according to prescribed instructions.
<b>Chemical Stability</b>	Stable under recommended storage conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient, glufosinate ammonium.

<b>Acute oral toxicity</b>	male rat: LD50: 2,270 mg/kg female rat: LD50: 1,730 mg/kg male/female combined rat: LD50: 2,000 mg/kg
<b>Acute dermal toxicity</b>	male rat: LD50: 537 mg/kg female rat: LD50: 642 mg/kg male/female combined rat: LD50: 593 mg/kg
<b>Acute inhalation toxicity</b>	male rat: LC50: 2.97 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.  female rat: LC50: 3.91 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.  male rat: LC50: 11.9 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.  female rat: LC50: 15.6 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
<b>Skin irritation</b>	rabbit: Mild skin irritation.
<b>Eye irritation</b>	rabbit: Corrosive - causes irreversible eye damage.
<b>Sensitisation</b>	guinea pig: Non-sensitizing.
<b>Chronic toxicity</b>	Glufosinate-ammonium caused neurobehavioral effects and/or



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neuropathological changes in animal studies. Glufosinate-ammonium was well tolerated in rats and mice but less well tolerated in the dog in subchronic studies.

**Assessment Carcinogenicity**

Glufosinate-ammonium was not carcinogenic in lifetime feeding studies in rats and mice.

**ACGIH**

None.

**NTP**

None.

**IARC**

None.

**OSHA**

None.

**Reproductive toxicity**

Implantation loss occurred in a rat multigeneration study with Glufosinate-ammonium. There were no effects on male fertility.

**Developmental Toxicity**

Glufosinate-ammonium caused developmental toxicity only at doses toxic to the dams. Glufosinate-ammonium caused an increased incidence of post implantation losses.

**Mutagenicity**

Glufosinate-ammonium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**SECTION 12. ECOLOGICAL INFORMATION**

**Environmental precautions**

Do not allow to get into surface water, drains and ground water. Do not apply when weather conditions favor runoff or drift. Drift or runoff from treated areas may adversely affect non-target plants. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance**

It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Dispose of contents/container in accordance with local regulation.

**Container Disposal**

Do not re-use empty containers. Follow advice on product label and/or leaflet.

**SECTION 14. TRANSPORT INFORMATION**

**TDG**

UN-Number

**2902**



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Labels 6.1  
Packaging group III  
Description of the goods PESTICIDE, LIQUID, TOXIC, N.O.S.  
(GLUFOSINATE-AMMONIUM)

**49CFR**

UN-Number **2902**  
Class 6.1  
Packaging group III  
Description of the goods PESTICIDES, LIQUID, TOXIC, N.O.S.  
(GLUFOSINATE-AMMONIUM)

**IMDG**

UN-Number **2902**  
Class 6.1  
Packaging group III  
Marine pollutant NO  
Description of the goods PESTICIDE, LIQUID, TOXIC, N.O.S.  
(GLUFOSINATE-AMMONIUM SOLUTION)

**IATA**

UN-Number **2902**  
Class 6.1  
Packaging group III  
Environm. Hazardous Mark NO  
Description of the goods PESTICIDE, LIQUID, TOXIC, N.O.S.  
(GLUFOSINATE-AMMONIUM SOLUTION )

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.

**SECTION 15. REGULATORY INFORMATION**

**PCP Registration No.** 28837

**US Federal Regulations**

**TSCA list**

Alkylethersulfate, sodium salt 68891-38-3  
1-Methoxy-2-propanol 107-98-2

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

None.

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

None.

**US States Regulatory Reporting**

**CA Prop65**

This product does not contain any substances known to the State of California to cause cancer.





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This product does not contain any substances known to the State of California to cause reproductive harm.

#### US State Right-To-Know Ingredients

1-Methoxy-2-propanol	107-98-2	CA, IL, MN, RI
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#### Canadian Regulations

##### Canadian Domestic Substance List

Alkylethersulfate, sodium salt	68891-38-3
1-Methoxy-2-propanol	107-98-2

#### Environmental

##### CERCLA

None.

##### Clean Water Section 307 Priority Pollutants

None.

##### Safe Drinking Water Act Maximum Contaminant Levels

None.

#### International Regulations

##### European Inventory of Existing Commercial Substances (EINECS)

Glufosinate ammonium	77182-82-2
1-Methoxy-2-propanol	107-98-2

## SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2	Flammability - 2	Instability - 1	Others - none
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HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2	Flammability - 2	Physical Hazard - 1	PPE -
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0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Reviewed and updated for general editorial purposes.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 01/17/2012

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