

Material safety data sheet

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name: Glufosinate ammonium 150g/L SL

Usage: herbicide

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Component Name | CAS-No. | Average |
|--------------------------|------------|---------|
| Glufosinate ammonium | 77182-82-2 | 150g/L |

SECTION 3. 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.

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

Potential Environmental Effect

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

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.

Skin Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes.

Ingestion 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

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

Suitable extinguishing media

Water spray, Foam, Carbon dioxide (CO₂), 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 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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : blue to blue green or light yellow

Physical State liquid

Odor aromatic

pH 4-8

Evaporation rate no data available

Boiling Point ca. 99 °C / 210 °F at 1.013 hPa

Water solubility at 20 °C: miscible

Decomposition temperature> 200 °C

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid Extremes of temperature and direct sunlight.

Incompatibility Strong oxidizing agents , Acids ,Bases

Hazardous Decomposition Products Thermal decomposition Ammonia

Hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

Chemical Stability 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.

Acute oral toxicity male rat: LD50: 2,270 mg/kg

female rat: LD50: 1,730 mg/kg

male/female combined rat: LD50: 2,000 mg/kg

Acute dermal toxicity male rat: LD50: 537 mg/kg

female rat: LD50: 642 mg/kg

male/female combined rat: LD50: 593 mg/kg

Acute inhalation toxicity 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.

Skin irritation rabbit: Mild skin irritation.

Eye irritation rabbit: Corrosive - causes irreversible eye damage.

Sensitisation guinea pig: Non-sensitizing.

Chronic toxicity Glufosinate-ammonium caused neurobehavioral effects and/or 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.

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

Non-dangerous goods

SECTION 15. REGULATORY INFORMATION

NA

SECTION 16. OTHER INFORMATION

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions.