

Date: Jun.22th, 2025

### MSDS FOR Glufosinate-ammonium

#### 1. Chemical Product Identification

Product Name: Glufosinate-ammonium 95%TC

Molecular Formula:  $C_5H_{15}N_2O_4P$

Molecular Weight: 198.2

Structural Formula:

Chemical Name: ammonium ( $\pm$ )-2-amino-4-(hydroxymethylphosphinyl)butanoate

Chemical group: phosphinic acid herbicide

CAS No.: 77182-82-2

Manufacturer: HEBEI JRAIN TECHNOLOGY CO.,LTD.

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#### 2. Composition / Information on Ingredients

Ingredient	CAS No.	Content %(w/w)
<b>Active ingredient</b> Glufosinate-ammonium	77182-82-2	Min 95%
<b>Inert ingredient</b> Other ingredients, including water	//	Up to 100%

#### 3. Hazards Identification

##### Emergency Overview

##### Warning!

**CAUSE SUBSTANTIAL BUT TEMPORARY EYE INJURY.**

**HARMFUL IF SWALLOWED, INHALED OR ABORSORBED FROM SKIN**

Do not get in eyes or on clothing. Avoid breathing vapor or mist.

##### Potential Health Effects (on toxicity studies)

**Eye:** cause substantial but temporary eye injury.

**Skin:** harmful if aborsorbed from skin. May cause slight irritating.

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**Ingestion:** harmful if swallowed. Do not take internally.

**Inhalation:** harmful if inhaled.

### Environment Hazards:

Glufosinate-ammonium is very soluble in water and is hydrolytically and photolytically stable

### Signs and Symptoms

Nausea, vomiting, diarrhea, increased salivation, drowsiness, tremors, convulsions, respiratory depression, cardiac arrhythmia, decreased blood pressure, drowsiness and/or loss of consciousness. These symptoms may be delayed by up to 48 hours after exposure.

## 4. First Aid Measures

**Ingestion:** Rinse mouth thoroughly with plenty of water. Do not induce vomiting. Get medical attention immediately.

**Eye Contact:** Flush eyes with plenty of water. Get medical attention if irritation persists.

**Skin Contact:** Remove contaminated clothing. Wash skin immediately with plenty of soap and water. Get medical attention.

**Inhalation:** Remove individual to fresh air. Get medical attention if breathing difficulty develops.

### Notes to Physician:

Symptoms may be delayed by up to 48 hours following ingestion. Thus, a patient ingesting undiluted product treated as outlined below. Treatment should be symptomatic and supportive.

## 5. Fire-Fighting Measures

### Hazard Characteristic:

Low toxicity, Herbicides

**Hazardous Combustion Products:** In a fire, irritant and toxic fumes containing oxides of carbon and nitrogen, hydrogen chloride, combustion products sulphur dioxide and other toxic substances may be generated.

### Extinguishing medium:

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Small fire:** Dry chemical, foam or carbon dioxide (CO<sub>2</sub>).

**Large fire:** foam, water, Move containers from fire area if without risk, Cool containers with water from maximum distance

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### Fire Fighting Instructions

As in any fire, wear self-contained breathing apparatus pressure-demand, and full protective gear. Keep upwind. Isolate hazard area. Avoid inhalation of smoke and fumes. Use water or foam to reduce fumes. Do not touch spilled material. If possible, move containers from area. Extinguish only if flow can be stopped. Use flooding amounts of water as fog. Cool containers with flooding amounts of water from as far a distance as possible. Avoid breathing vapors.

### Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Oxides of phosphorus

### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

## 6. Accidental Release Measures

### In Case of Spill or Leak

**Small Spills:** Absorb with an inert absorbent material such as granular clay, saw dust, or pet litter. Sweep up carefully while avoiding the formation of a dust cloud. Place in an approved chemical waste container for disposal. Rinse spill area with small amount of soapy water. Contain and absorb the rinsate with inert absorbents and place into the same disposal container. Area can be washed with water to remove the last trace residue. Do not allow water to contaminate water supplies or sewers.

**Large Spills:** Eliminate all ignition sources. Stop leak if you can do so without coming into contact with spilled material. Dike far ahead of liquid spill for later disposal. All equipment used to clean up spill should be grounded. Prevent entry into waterways, sewers, basements or confined areas. Inform appropriate authorities immediately if contamination occurs. Contact Aventis for further assistance if necessary.

## 7. Handling and Storage

### Handling

#### Appropriate technical measure:

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Specific safe handling advice:** Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**Precautions:** May be fatal if absorbed through the skin. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Avoid breathing vapor or spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

**Storage precautions:** Do not use or store near heat or open flame. Do not contaminate water, food, or feed by storage or disposal.

### 8. Exposure Controls/Personal Protection

**Engineering controls:** Control airborne concentrations below the appropriate exposure guideline (see below for any applicable OSHA/ACGIH Exposure Limits). Local exhaust ventilation may be necessary.

**Respiratory protection:** Ensure good ventilation. If not adequate, use a chemical cartridge-type respirator approved by the National Institute of Occupational Health and Safety. **Eye protection:** Wear safety glasses, splash goggles or face shield.

**Physical protection:** Wear chemical-resistant gloves (Neoprene, Nitrile, PVC) and other protective clothing to avoid skin contact.

**Other protective:** Eye wash facility and safety shower should be available.

The following personal protective equipment (PPE) must be worn when using product or upon early entry into treated areas during the Restricted Entry Interval (REI): Long sleeved shirt and long pants; or Coveralls (required for REI only) Chemical-resistant gloves; Shoes and socks; Protective eyewear Chemical-resistant apron during mixing and loading.

### 9. Physical and Chemical Properties

Appearance: White solid

Odor: A slight odor

Boiling point: N/A

Melting point: 215°C

Vapor Pressure:  $<3.1 \times 10^{-2}$  mPa (20°C)

Specific gravity: 1.32g/cm<sup>3</sup> (20°C)

Solubility: In water >500 g/l (pH 5–9, 20 °C). In acetone 0.16, ethanol 0.65, ethyl acetate 0.14, toluene 0.14, hexane 0.2 (all in g/l, 20°C).

PH: 3.0-6.0

### 10. Stability and Reactivity

**Stability:** Stable at ambient temperatures, Stable to light and to hydrolysis at pH 5, 7 and 9

**Hazardous polymerization:** Will not occur.

**Conditions to avoid:** Avoid sources of ignition and extreme heat.

**Materials to Avoid:** Avoid contact with strong oxidizing agents, acids or bases. Ammonia may be evolved in the materials presence of alkalis.

**Hazardous Decomposition Products:** Oxides of carbon and nitrogen, hydrogen chloride, combustion products sculpture dioxide etc.

### 11. Toxicological Information

Oral LD<sub>50</sub> (Male rats): 2000mg/kg

Oral LD<sub>50</sub> (Female rats): 1620mg/kg

Oral LD<sub>50</sub> (Male mouse): 431mg/kg

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Oral LD<sub>50</sub> (Female mouse): >4000mg/kg

Dermal LD<sub>50</sub> (Male rats): 4000mg/kg

Dermal LD<sub>50</sub> (Female rats): 1.26mg/L

Contact with the skin: Slight signs of skin irritation of rabbits

Contact with the eyes: Slight signs of eye irritation of rabbits

Sensitization (Guinea pig, Derma): Not sensitizing

No teratogenicity and neurotoxicity effects. Harmful if swallowed or if inhaled

## 12. Ecological and Ecotoxicological Information

Eco-Acute Toxicity (Technical Grade): Fish

(Rainbow trout) LC<sub>50</sub> (96h): 710mg/L Fish

(Bluegill sunfish) LC<sub>50</sub>(96h): >1000mg/L Fish

(Daphnia magna) EC<sub>50</sub> (48h): 560-1000mg/L

Birds (Bobwhite Quail): Oral LC<sub>50</sub> >5000mg/kg

Birds (Mallard Ducks): Oral LD<sub>50</sub> >2500mg/kg.

Green algae, EC<sub>50</sub> (48h): ≥1000mg/L

Honeybees LD<sub>50</sub> (contact): Not hazardous to bees, LD<sub>50</sub> >100 µg/bee

**Environmental Fate:** Glufosinate-ammonium is very soluble in water and is hydrolytically and photolytically stable. Its mobility under laboratory conditions varies widely, depending upon the soil type. However, the results of numerous terrestrial field dissipation studies indicate that the potential for groundwater contamination is minimal. This appears to be primarily a result of its rapid degradation by microorganisms in the soil and a tendency to bind to certain soil elements resulting in no measurable leaching. Glufosinate-ammonium does not accumulate in fatty tissues of fish or other animals.

## 13. Disposal Considerations

### Disposal:

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### Container Disposal:

Empty containers should be triple rinsed (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

## 14. Transport Information

**ADNR** Not dangerous goods

**ADR** Not dangerous goods

**GGVE** Not dangerous goods

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**GGVS** Not dangerous goods

**IATA\_C** Not dangerous goods

**IATA\_P** Not dangerous goods

**IMDG** Not dangerous goods

**RID** Not dangerous goods

### 15. Regulatory Information

**Section 311/312 Hazard Classes:** Acute health hazard

**Section 313 Toxic Chemicals:** No listed

### 16. Other Information

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

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