Material Safety Data Sheet
DELTA 150 SL
Glufosinate-ammonium 150 SL

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product information

Product Name：	Glufosinate-ammonium 150g/l SL
Company:	ZHEJIANG XINAN CHEMICAL INDUSTRIAL GROUP CO., LTD.
Add:	Xinanjiang, Jiande, Zhejiang, P.R. China
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Emergency telephone number:	86 571-6472 3891

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Glufosinate-ammonium 150g/l

Chemical Name:	CAS-No.:	Concentration [%]
Glufosinate-ammonium	77182-82-2	13.6
Other ingredients (non-hazardous)		Up to 100%

3. HAZARDS IDENTIFICATION

Risk advice to man and the environment

Harmful by inhalation, in contact with skin and if swallowed.

Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. May impair fertility. Possible risk of harm to the unborn child.

ADG Classification	Not “dangerous goods” for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
SUSMP classification (Poison Schedule)	Schedule 5 (Standard for the Uniform Scheduling of Medicines and Poisons)

4. FIRST AID MEASURE

General advice: If poisoning occurs, immediately contact a doctor or Poisons Information Centre, and follow the advice given. Show this Material Safety Data Sheet to the doctor.

Inhalation:	Remove from exposure and move to fresh air immediately. Keep patient warm and at rest. If symptoms persist, call a physician.
Skin:	Take off contaminated clothing and shoes immediately. Wash off

	immediately with soap and plenty of water. If symptoms persist, call a physician.
Eyes:	Wash off immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
Ingestion:	Do NOT induce vomiting. Keep at rest. Rinse mouth. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

Vomiting, Diarrhoea, Abdominal pain, Tremors, Hypotension, muscular weakness, Unconsciousness, Coma, Convulsions, Respiratory failure, Nausea, Tachycardia

Symptoms

Symptoms may be delayed.

Treatment

Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable.

Forced alkaline diuresis and hemodialysis may be considered.

There is no specific antidote.

In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens.

If not effective, phenobarbital may be used.

Contraindication: atropine.

Oxygen or artificial respiration if needed.

Keep respiratory tract clear.

ECG - monitoring (Electrocardiogram).

EEG - monitoring (Electroencephalogram).

Monitor: respiratory, cardiac and central nervous system.

Keep under medical supervision for at least 48 hours.

5. FIRE-FIGHTING MEASURES

Precautions for fire-fighting	In the event of fire, wear self-contained breathing apparatus. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.
Extinguishing media:	Use water spray, Foam, dry chemical or carbon dioxide.
Hazards from combustion	In the event of fire the following may be released:

products	Carbon monoxide (CO) Carbon dioxide (CO2) Nitrogen oxides (NOx) Oxides of phosphorus Sulphur oxides

6. ACCIDENTAL RELEASE MEASURES

General information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:	Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.
Personal precautions	Use personal protective equipment.
Environmental precautions	Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.
Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

7. HANDLING AND STORAGE

Handling:	Hygiene measures When using, do not eat, drink or smoke. Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove soiled clothing immediately and clean thoroughly before using again.
Storage:	Requirements for storage areas and containers Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from freezing. **Advice on common storage**

Keep away from food, drink and animal feedingstuffs.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protective equipment:

General advice	Eye wash facility and safety shower should be available.
Eyes	Face-shield or goggles.
Skin	Cotton overall buttoned to the neck and wrist Washable hat
Hand protection	Elbow-length PVC or nitrile gloves
Engineering controls	Advice on safe handling Provide for appropriate exhaust ventilation and dust collection at achinery.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	
Form	Liquid
Colour	Colourless
Odour	weakly pungent
Safety data：	
pH	4.0 – 7.0 at 1% water solution (23 °C)
Flash point	Not flammable
Ignition temperature	440 °C
Vapour pressure:	No data available
Density:	ca. 1.103 g/cm³ at 20 °C
Upper explosion limit	No data available
Lower explosion limit	No data available
Water solubility:	Soluble
Partition coefficient: noctanol/	No data available

10. STABILITY AND REACTIVITY

Chemical stability:	Stable under recommended storage conditions.
Conditions to avoid:	Heat, flames and sparks.
Incompatibilities with other materials:	Strong oxidizing agents Acids Bases Alkali metals
Hazardous decomposition products:	Thermal decomposition can lead to release of: Ammonia Oxides of carbon Nitrogen oxides (NOx)

Oxides of phosphorus
Sulphur oxides

11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Inhalation	Harmful if inhaled.
Skin	Harmful if absorbed through skin.
Eye	Causes eye irritation.
Ingestion	Harmful if swallowed.
Acute oral toxicity	LD50 (rat) 5000 mg/kg
Acute inhalation toxicity	LC50 (rat) 5.325 mg/l Exposure time: 4 h
Acute dermal toxicity	LD50 (rat) 2000 mg/kg
Skin irritation	No irritation (rabbit)
Eye irritation	No irritation. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig)
Chronic toxicity	Glufosinate-ammonium caused neurobehavioral effects and/or neuropathological changes in animal studies. Glufosinateammonium was well tolerated in rats and mice but less well tolerated in the dog in subchronic studies.
Mutagenicity	Glufosinate-ammonium was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Carcinogenicity	Glufosinate-ammonium was not carcinogenic in lifetime feeding studies in rats and mice.
Toxicity to Reproduction	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 dose levels toxic to the dams. Glufosinate-ammonium caused an increased incidence of post implantation losses.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 34 mg/l Exposure time: 96 h Test conducted with a similar formulation.
Toxicity to aquatic invertebrates	EC50 (Water flea (Daphnia magna)) 26.8 Exposure time: 48 h Test conducted with a similar formulation.
Toxicity to aquatic plants	(Desmodesmus subspicatus) 36 mg/l Exposure time: 72 h Test conducted with a similar formulation.

Toxicity to other organisms	LC50 (Coturnix japonica (Japanese quail)) > 5,000 mg/kg Exposure time: 8 d The value mentioned relates to the active ingredient glufosinateammonium.
Biodegradability	Readily biodegradable. The value mentioned relates to the active ingredient glufosinate-ammonium.
Stability in soil	No data available
Bioaccumulation	The ecological data given are those of the active ingredient. Does not bioaccumulate.
Environmental	No data available

13. DISPOSAL CONSIDERATIONS

Metal drums and plastic containers:
Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.
Refillable containers:
If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty container by pumping through dry-break connection system. Do not attempt to breach the valve system or the filling point, or contaminate the container with water or other products. Ensure that the coupler, pump, meter and hoses are disconnected, triple rinsed and drained after each use. When empty, or contents no longer required, return the container to the point of purchase.

14. TRANSPORT INFORMATION
According to national and international transport regulations not classified as dangerous goods.

15. REGULATION INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 39118

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.