

**MATERIAL SAFETY DATA SHEET****BEST-BUY 200 SL**

Revision date: 21.05.09

1. COMPOSITION AND PRODUCT IDENTIFICATION

Product name:	Best-Buy 200 SL
Active ingredient:	Glufosinate-ammonium
Chemical Group:	Phosphinic acid
Recommended use:	Non-selective herbicide for agricultural use
Producer:	China National Chemical Construction Ningbo Co 14/F, Haishu Building No 11, West Zhongshan Road Ningbo, China
Supplier:	Almandine Corporation SA Gotthardstrasse 3, 6300 Zug, Switzerland Tel: +41 41 726 30 65 Fax: +41 41 726 30 61 Email: almch@almandine.com

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/l)	Symbol	R-phrase
Glufosinate-ammonium	77182-82-2	200	Xn	R20
Ammonium lauryl ether sulphate	32612-48-9	<400	Xi	R38, R41
1-methoxy-2-propanol	107-98-2	<200		R10

See Section 16 for R-phrase explanations

3. HAZARDS IDENTIFICATION

Irritating to eyes. May be irritating to respiratory tract. Avoid excessive contact.

4. FIRST AID MEASURES

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: If inhaled, remove to fresh air, keep warm and at rest. Seek medical advice if inhaled in large quantities.

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Skin contact:	Carefully remove contaminated clothing and footwear. Wash affected areas with soap and water. Seek medical advice if concerned.
Eye contact:	Rinse eyes immediately with clean water for at least 15 minutes and obtain medical aid.
Ingestion:	Wash out mouth with water. DO NOT induce vomiting. Seek immediate medical advice.
First aid facilities:	Provide eyewash and safety shower facilities in the workplace.
Medical attention:	Glufosinate-ammonium is a glutamine synthetase inhibitor and can interfere with neurotransmitter function.
Symptoms:	Local: Moderately irritating to eyes. Systemic: Shivering, cramps, gastrointestinal complaints, hyperthermia, dyspnoea, brachycardia/tachycardia, convulsions, respiratory depression, amnesia, drowsiness and/or loss of consciousness. Regardless of the amount ingested, the patient must be admitted to hospital for at least 36 hours and treated immediately as outlined below, because symptoms may be delayed from a few hours to 48 hours after exposure.
Treatment:	Emergency measures: Symptomatic treatment and administration of antidotes, decontamination. If ingested, endotracheal intubation and gastric lavage should be performed as soon as possible, followed by administration of charcoal and sodium sulphate solution. Anticonvulsant therapy: Phenobarbital-sodium, 1 mg/kg intramuscularly or subcutaneously until maximum 5 mg/kg daily; when necessary, 10 mg diazepam slowly intravenously. Repeat as necessary until fully sedated. Elimination by dialysis (forced alkaline diuresis) and/or haemo-perfusion. It is essential that this be done soon after ingestion to be effective. If a large amount has been ingested, keep under medical supervision for at least 48 hours. Contraindication: Atropine. Recovery is normally spontaneous, usually within 48 hours.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water fog, fine water spray, foam, dry chemical, carbon dioxide.
Hazards from combustion products:	Irritant and toxic fumes may contain oxides of carbon and nitrogen, hydrogen chloride, sulphur dioxide and others.

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Precautions for fire fighters: Fire-fighters should wear full protective gear, including self-contained apparatus. Keep unnecessary people away. Use water spray to cool containers.

Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. Extinguish or remove any sources of ignition. When dealing with spills do not eat, drink or smoke, and wear protective clothing and equipment as described in Section 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION. Keep people and animals away. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material, collect and store in sealed drums for safe disposal. Decontaminate the area and equipment with bleach or hydrated lime. Deal with all spillages immediately. Warn the local water authority if watercourses become contaminated.

7. HANDLING AND STORAGE

Handling: Keep out of reach of children. Irritating to eyes. Avoid breathing vapour or spray. For product in eyes, wash immediately with water. For product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Storage: Store between 5-30°C in the closed original container, in a cool, dry, well-ventilated area, away from direct sunlight and sources of ignition. Do not store in steel or aluminium containers.

Flammability: Not flammable under normal conditions of use. Not classified as a combustible liquid, as the boiling point (96°C) is less than the fire point (>96°C). The product does not sustain combustion.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure standards: NOHSC Exposure Standards:
Propylene glycol monomethyl ether
TLV-TWA 100 ppm, 369 mg/m³
Time weighted average (TWA) is the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.
Short-term exposure limit (STEL) is a 15-minute TWA



exposure that should not be exceeded at any time during the working day.

Absorption through the skin may be a significant source of exposure.

Engineering controls:

Use only in well-ventilated areas. If necessary, use local exhaust ventilation to keep airborne concentration below exposure limits.

Personal protective equipment:

Wear face shield or goggles
Wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat.
Wear elbow-length PVC or nitrile gloves.
If working in a poorly ventilated area or if occupational exposure levels are likely to be exceeded, wear a respirator suitable for organic vapours.
After each day's use, wash gloves, goggles or face shield, respirator if worn, and contaminated clothing.

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance:	Blue to bluish-green liquid
Odour:	Slightly pungent
pH:	4.6 – 6.6 (1% solution)
Vapour pressure:	Low
Boiling point:	96°C
Solubility:	Soluble in water
Specific Gravity:	1.11 at 20°C
Flash Point:	92°C (Pensky-Martens CC)
Flammability (explosive) limits:	No data
Anti-ignition temperature:	475°C
Partition coefficient Octanol/water:	Glufosinate-ammonium: Log P _{ow} = <0.1 (pH7, 22°C)

10. STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions of use.



Hazardous polymerisation:	Will not polymerise
Conditions to avoid:	Sources of ignition and extreme heat.
Incompatible materials:	Avoid contact with strong oxidising agents, acids or bases. Ammonia may be evolved in the presence of alkalis.
Hazardous decomposition Products:	Ammonia. In a fire, oxides of carbon, nitrogen, phosphorus and sulphur may be emitted

11. TOXICOLOGICAL INFORMATION

Oral toxicity:	LD ₅₀ rat: >2000-5000 mg/kg, GHS Category 5
Dermal toxicity:	LD ₅₀ rat: >2000 mg/kg, GHS Category 5 GHS – Globally Harmonised System of classification
Inhalation toxicity:	LC ₅₀ rat 4 h 1.26 mg/l (technical material)
Skin irritation:	Non-irritant
Eye irritation:	Moderate irritant
Skin sensitisation:	Non-sensitising, guinea pig

12. ENVIRONMENTAL INFORMATION

Glufosinate-ammonium is practically non-toxic to birds, fish, honeybees, earthworms and beneficial insects. It is practically non-toxic to *Daphnia*, but moderately toxic to sensitive aquatic species. It is expected to be slightly to moderately toxic to wild animals. DO NOT contaminate streams, rivers or waterways with this product or used containers.

Ecotoxicity (technical material)

Fish toxicity:	LC ₅₀ 96 h rainbow trout	710 mg/l
	LC ₅₀ 96 h carp, bluegill sunfish, golden orfe	>1000 mg/l
Bird toxicity:	8-day dietary LC ₅₀ Japanese quail	>5000 mg/kg
<i>Daphnia</i> toxicity:	EC ₅₀ 48 h <i>Daphnia magna</i>	560 –1000 mg/l
Algal toxicity:	LD ₅₀ <i>Scenedesmus subspicatus</i>	>=1000 mg/l
	LD ₅₀ <i>Scenedesmus capricornutum</i>	37 mg/l
Others:	Non-toxic to bees, honey bees and poultry.	

Environmental fate: Glufosinate-ammonium is very soluble in water and is stable to hydrolysis and photolysis. It is rapidly degraded in surface



levels of soils and in water, and is readily biodegradable.

The potential for groundwater contamination is minimal. Do not allow product to enter wastewater, rivers or streams. Does not accumulate in the fatty tissues of fish or other animals.

13. DISPOSAL CONSIDERATIONS

Triple- or pressure-rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. Recycle, break, crush or puncture and then bury empty containers in a local authority landfill site. Do not burn empty containers. Dispose of waste product through an official waste contractor.

14. TRANSPORTATION INFORMATION

Proper shipping name: None
Shipping label: Non-restricted

15. REGULATORY INFORMATION

Risk phrases: R36/37 Irritating to eyes and respiratory tract
Safety phrases: S2 Keep out of reach of children.
S3/7/9 Store the container securely closed in a cool well-ventilated place.
S23 Avoid breathing vapour or mist
S24/25 Avoid contact with skin and eyes.
S49 Always keep product in its original container.

16. OTHER INFORMATION

Risk phrases: R10 Flammable
R20 Hazardous if inhaled.
R38 Irritating to skin
R41 Risk of severe eye damage

No liability is accepted for any injury, loss, damage or cost arising directly or indirectly from the use of the product or from the use of information contained within the safety data sheet since the customer's treatment of the product is necessarily beyond our control. The supplied data are based on current knowledge and experience. This safety data sheet is intended to describe our product in terms of safety requirements. The customer should determine by appropriate trials that the product is suitable for his intended use.