

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

PEARL

MAPP: 17531

Contains 150 g/l (13.52% w/w) glufosinate-ammonium

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

For use as a professional horticultural and amenity herbicide

### 1.3. Details of the supplier of the safety data sheet

Agrigem Limited  
Saxby Road  
Owmbly-by-Spital  
Market Rasen  
LN8 2DA

Tel.: 0800 1337849

Email: [sales@agrigem.co.uk](mailto:sales@agrigem.co.uk)

### 1.4. Emergency telephone number

#### IN CASE OF TOXIC OR TRANSPORT EMERGENCY

**National Chemical Emergency Centre: Telephone 01865 407333.**

For the emergency information telephone National Poisons Information Service at one of the following numbers:

London 020 7635 9191  
5588

Belfast 01232 240503

Birmingham 0121 507

Penarth 01222 709901

Edinburgh 0131 536 2300

Leeds 0113 243 0715

Newcastle 0191 232 5131

## 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

**Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended:**

**Reproductive toxicity: Category 1B**

H360Fd May damage fertility. Suspected of damaging the unborn child.

**Acute toxicity: Category 4**

H302 Harmful if swallowed.

**Acute toxicity: Category 3**

H311 Toxic in contact with skin.

**Specific target organ toxicity - repeated exposure: Category 2**

H373 May cause damage to organs (nervous system) through prolonged or repeated exposure if swallowed.

**Serious eye damage: Category 1**

H318 Causes serious eye damage.

## 2.2. Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended:

**Hazardous components which must be listed on the label:**

- Glufosinate ammonium

**Signal word:** Danger

**Hazard pictograms:** GHS05, GHS06, GHS08



### **Hazard statements:**

H302 Harmful if swallowed.

H311 Toxic in contact with skin.

H318 Causes serious eye damage.

H360Fd May damage fertility. Suspected of damaging the unborn child.

H373 May cause damage to organs (nervous system) through prolonged or repeated exposure if swallowed.

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

### **Precautionary statements:**

P201 Obtain special instructions before use.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

## 2.3. Other hazards

No other hazards known. This mixture does not meet the criteria for PBT or vPvB.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2. Mixtures

##### Hazardous components:

Chemical Name	CAS/EC Number	Classification in accordance with Regulation (EC) 1272/2008	Concentration [%]
Glufosinate ammonium	77182-82-2 278-636-5	Repr. 1B, H360Fd Acute Tox. 4, H332 Acute Tox. 4, H312 Acute Tox. 4, H302 STOT RE 2, H373	13.50
Alkylethersulfate, sodium salt	68891-38-3 500-234-8	Eye Dam. 1, H318 Skin Irrit. 2, H315 Aquatic Chronic 3, H412	> 10.00
1-Methoxy-2-propanol	107-98-2 203-539-1	Flam. Liq. 3, H226 STOT SE 3, H336	> 1.00 – <15.00

Refer to section 16 for full text of hazard statements not displayed in full in sections 2 or 3.

### 4. FIRST AID MEASURES

#### 4.1. Description of first aid measures

##### General advice

Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

##### Inhalation

Move to fresh air. Keep patient warm and at rest. Call a physician or poison control centre immediately.

##### Skin contact

Wash off immediately with soap and plenty of water. Call a physician or poison control centre immediately.

##### Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control centre immediately.

##### Ingestion

Rinse mouth. Do NOT induce vomiting. Call a physician or poison control centre immediately.

#### 4.2. 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 may be delayed.

#### 4.3. Indication of any immediate medical attention and special treatment needed

##### Risks

Watch victim for at least 48 hours because of possible delayed signs of poisoning.

#### **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. FIREFIGHTING MEASURES**

### **5.1. Extinguishing media**

#### **Suitable**

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

#### **Unsuitable**

High volume water jet

### **5.2. Special hazards arising from the substance or mixture**

In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Oxides of phosphorus, Nitrogen oxides (NO<sub>x</sub>)

### **5.3. Advice for firefighters**

#### **Special protective equipment for fire-fighters**

In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

#### **Further information**

Contain the spread of the fire-fighting media. Do not allow run-off from firefighting to enter drains or water courses.

## **6. ACCIDENTAL RELEASE MEASURES**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.

### **6.2. Environmental precautions**

Do not allow to get into surface water, drains and ground water. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

### **6.3. Methods and material 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.

### **6.4. 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

### 7.1. Precautions for safe handling

No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

### 7.2. Conditions for safe storage, including any incompatibilities

Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Protect from freezing. Keep away from direct sunlight. Keep away from food, drink and animal feedingstuffs.

### Suitable materials

HDPE (high density polyethylene)

### 7.3. Specific end use(s)

Herbicide.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

Component	CAS No.	Control parameters	Update	Basis
Glufosinate ammonium	77182-82-2	0.9 mg/m <sup>3</sup> (TWA)		OES BCS*
1-Methoxy-2-propanol	107-98-2	375 mg/m <sup>3</sup> /100 ppm (TWA)	12 2011	EH40 WEL
1-Methoxy-2-propanol	107-98-2	560 mg/m <sup>3</sup> /150 ppm (STEL)	12 2011	EH40 WEL
1-Methoxy-2-propanol	107-98-2	568 mg/m <sup>3</sup> /150 ppm (STEL)	12 2009	EU ELV
1-Methoxy-2-propanol	107-98-2	375 mg/m <sup>3</sup> /100 ppm (TWA)	12 2009	EU ELV

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

### 8.2. Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004). Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

### Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

### Respiratory protection

Respiratory protection is not required under anticipated circumstances of exposure.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g.

containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

#### **Hand protection**

Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

#### **Eye protection**

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

#### **Skin and body protection**

Wear standard coveralls and Category 3 Type 4 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1. Information on basic physical and chemical properties**

<b>Form</b>	Liquid
<b>Colour</b>	blue to blue green
<b>Odour</b>	weakly pungent
<b>pH</b>	6.8 - 7.8 at 100 % (23 °C)
<b>Boiling point/boiling range</b>	ca. 99 °C at 1,013 hPa Test conducted with a similar formulation.
<b>Flash point</b>	ca.57 °C The product does not sustain combustion.
<b>Autoignition temperature</b>	ca. 405 °C
<b>Density</b>	ca. 1.11 g/cm <sup>3</sup> at 20 °C
<b>Partition coefficient: noctanol/water</b>	Glufosinate-ammonium: log Pow: -4.01 at pH 7
<b>Surface tension</b>	ca. 29 mN/m at 40 °C
<b>Impact Sensitivity</b>	Not impact sensitive.
<b>Explosivity</b>	Not explosive

### **9.2. Other information**

Further safety related physical-chemical data are not known.

## **10. STABILITY AND REACTIVITY**

### **10.1. Reactivity**

Thermal decomposition > 200 °C, Heating rate: 10 K/min  
Test conducted with a similar formulation.

### **10.2. Chemical stability**

Stable under recommended storage conditions.

### **10.3. Possibility of hazardous reactions**

No dangerous reaction known under conditions of normal use.

### **10.4. Conditions to avoid**

Extremes of temperature and direct sunlight.

### **10.5. Incompatible materials**

Bases

## 10.6. Hazardous decomposition products

Ammonia

## 11. TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

<b>Acute oral toxicity</b>	LD50 (rat) 1,730 mg/kg
<b>Acute inhalation toxicity</b>	LC50 (rat) 2.97 mg/l Exposure time: 4 h Determined in the form of a respirable aerosol. During intended and foreseen applications, no respirable aerosol is formed.
<b>Acute dermal toxicity</b>	LD50 (rat) 593 mg/kg
<b>Skin irritation</b>	Slight irritant effect - does not require labelling. (rabbit)
<b>Eye irritation</b>	Severe eye irritation. (rabbit)
<b>Sensitisation</b>	Non-sensitizing. (guinea pig) OECD Test Guideline 406, Buehler test

#### Assessment repeated dose 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 Mutagenicity

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

#### Assessment Carcinogenicity

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

#### Assessment toxicity to reproduction

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

#### Assessment 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.

#### Further information

The toxicological data refer to a similar formulation.

## 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

#### Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 13.4 mg/l

Exposure time: 96 h

Test conducted with a similar formulation.

#### Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) 17.8 mg/l

Exposure time: 48 h

Test conducted with a similar formulation.

#### Toxicity to aquatic plants

EC50 (Selenastrum capricornutum) 71.3 mg/l

Exposure time: 72 h

Test conducted with a similar formulation.

#### Toxicity to bacteria

EC50 (activated sludge) > 1,000 mg/l

Exposure time: 3 h

The value mentioned relates to the active ingredient glufosinate-ammonium.

## 12.2. Persistence and degradability

**Biodegradability** Glufosinate-ammonium: not rapidly biodegradable

**Koc** Glufosinate-ammonium: Koc: 2.3

## 12.3. Bioaccumulative potential

Glufosinate-ammonium: Bioconcentration factor (BCF) 1<. Does not bioaccumulate.

## 12.4. Mobility in soil

Glufosinate-ammonium: Highly mobile in soils

## 12.5. Results of PBT and vPvB assessment

Glufosinate-ammonium: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

## 12.6. Other adverse effects

No other effects to be mentioned.

# 13. DISPOSAL CONSIDERATIONS

## 13.1. Waste treatment methods

### Product

In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).

### Contaminated packaging

Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times. Add washings to sprayer at time of filling.

Dispose of empty and cleaned packaging safely.

Large containers (> 25 l or > 25 kg) should not be rinsed or re-used for any other purpose.

Return large containers to supplier. Follow advice on product label and/or leaflet.

### Waste key for the unused product

020108 agrochemical waste containing dangerous substances.

# 14. TRANSPORT INFORMATION

## ADR/RID/ADN

### 14.1. UN number

2902

### 14.2. UN proper shipping name

PESTICIDE, LIQUID, TOXIC, N.O.S. (GLUFOSINATE-AMMONIUM SOLUTION)

### 14.3. Transport hazard class(es)

6.1

### 14.4. Packing group

III

### 14.5. Environmental hazards

Not classified as harmful to the environment

### 14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.



## 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No transport in bulk according to the IBC Code.

**Hazard no.** 60

**Tunnel Code** E

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

### IMDG

**Segregation group according to 5.4.1.5.11.1**

IMDG SEGREGATION GROUP 2 – AMMONIUM COMPOUNDS

### UK 'Carriage' Regulations

Emergency action code 2X

## 15. REGULATORY INFORMATION

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

This mixture is classified and labelled in accordance with REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

### 15.2. Chemical safety assessment

CSA not undertaken for this mixture.

## 16. OTHER INFORMATION

### Full text of hazard statements not displayed in full in sections 2 or 3

**H226** Flammable liquid and vapour.

**H302** Harmful if swallowed.

**H312** Harmful in contact with skin.

**H315** Causes skin irritation.

**H318** Causes serious eye damage.

**H332** Harmful if inhaled.

**H336** May cause drowsiness or dizziness.

**H360Fd** May damage fertility. Suspected of damaging the unborn child.

**H373** May cause damage to organs through prolonged or repeated exposure.

**H412** Harmful to aquatic life with long lasting effects.

This safety data sheet is compiled in accordance with REGULATION (EC) No 1907/2006 as amended by REGULATION (EC) 453/2010. This product is intended for professional users only.

THE INFORMATION GIVEN HEREIN IS, TO THE BEST OF OUR KNOWLEDGE, CORRECT AND IS PRESENTED IN GOOD FAITH BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS GIVEN.