

PEARL

MAPP 17531



A soluble concentrate formulation containing 150 g/l (13.52% w/w) glufosinate-ammonium.

- Can be used for preparing sports turf for line-marking.
- Effective control of field horsetail (*equisetum arvense*) and creeping thistle (*cirsium arvense*).

A foliar contact herbicide for use as a band application to:
Fence lines, spray applications must be made within 50 cm of fence line.
Managed amenity turf for line-marking preparation.

As a band or spot application to:
Natural surfaces not intended to bear vegetation
Permeable surfaces overlaying soils
Hard surfaces

PEARL

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



DANGER.

Harmful if swallowed. Toxic in contact with skin. Causes serious eye damage. May damage fertility. Suspected of damaging the unborn child. May cause damage to organs (nervous system) through prolonged or repeated exposure if swallowed. Obtain special instructions before use.

Wear protective gloves/protective clothing/eye protection/face protection. IF exposed or concerned: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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.

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

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

PROTECT FROM FROST

NET CONTENT:

Original formulation batch number and production date of the source product

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

Tel.: 0800 1337849

IMPORTANT INFORMATION

FOR USE ONLY AS A PROFESSIONAL HORTICULTURAL and AMENITY HERBICIDE

Crops/situations: Managed amenity turf (line marking preparation) and on natural surfaces not intended to bear vegetation, permeable surfaces overlaying soils and hard surfaces.

Maximum individual dose: 5.0 L product/ha, dependent on use.

Maximum number of treatments: 2 per crop.

Other Specific Restrictions

This product must be applied only between 1st March and 30th September.

Livestock must be kept out of treated areas until poisonous weeds such as ragwort have died and become unpalatable.

Only use as a band or spot application at rates not exceeding 750 g active substance/ha (treated surface) per application and maximum two applications per year.

Applications must be made using low drift nozzles and/or spray shields.

The container must not be re-used for any purpose.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

SAFETY PRECAUTIONS

Operator Protection

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) and SUITABLE PROTECTIVE GLOVES when handling contaminated surfaces or applying by hand-help equipment.

WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) when applying by vehicle-mounted or trailed equipment.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

TAKE OFF IMMEDIATELY all contaminated clothing.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin or eyes immediately.

AVOID ALL CONTACT WITH SKIN, EYES AND MOUTH.

DO NOT BREATHE SPRAY.

WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.

IF YOU FEEL UNWELL, seek medical advice (show the label where possible).

Environmental Protection

DO NOT CONTAMINATE WATER with the product or its container.

RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS. For advice on risk management see Directions for use.

To protect terrestrial non target plants respect a well determined unsprayed buffer zone to non-agricultural land.

Storage and Disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.

KEEP OUT OF REACH OF CHILDREN.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank and dispose of safely.

DO NOT RE-USE THIS CONTAINER for any purpose.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

RESTRICTIONS

Application of PEARL on hard surface:

Apply this product carefully. Ensure spraying takes place only when weeds are actively growing (1st March to 30th September) and is confined only to visible weeds including those in the 30cm swath covering the kerb edge and road gulley – do not overspray drains.

Application

Must only be applied using low drift nozzles and spray shield.

Weather

DO NOT spray if rain is imminent or likely within 6 hours of application and DO NOT apply to wet foliage if run off is likely to occur.

Drift

Avoid drift to areas outside those being sprayed, having due regard to the prevailing weather conditions, wind direction and spray quality being used.

Soils

PEARL is degraded after contact with the soil.

Do not spray at end of season on sandy soil.

PROBLEM CONTROLLED

A non-selective herbicide, which acts mainly by contact but some translaminar movement can occur within aerial plant parts.

PEARL kills all green tissue but does not harm mature bark. Deep-rooted perennial weeds will regrow.

PEARL controls grasses and broad-leaved weeds. A foliar contact herbicide for use as a band application to:

Fence lines. Spray applications must be made within 50 cm of fence line.

Managed amenity turf for line-marking preparation, and as a band or spot application to:

Natural surfaces not intended to bear vegetation,

Permeable surfaces overlaying soils

Hard surfaces.

PEARL controls a wide range of annual and perennial weeds including the following:

Established annual broad-leaved weeds at 3 l/ha

Annual Mercury (*Mercurialis annua*)

Annual Milk or Sow-thistle (*Sonchus asper*)

Black-bindweed (*Bilderdia convolvulus*)

Black Nightshade (*Solanum nigrum*)

Charlock (*Sinapis arvensis*)

Cleavers (*Galium aparine*)

Common Chickweed (*Stellaria media*)

Common Hemp-nettle (*Galeopsis tetrahit*)

Common Henbit Dead-nettle (*Lamium amplexicaule*)

Common Orache (*Atriplex patula*)

Corn Buttercup (*Ranunculus arvensis*)

Corn Marigold (*Chrysanthemum segetum*)

Corn Poppy (*Papaver rhoeas*)

Gallant Soldier (*Galinsoga parviflora*)

Groundsel (*Senecio vulgaris*)

Ivy-leaved Speedwell (*Veronica hederifolia*)

Knotgrass (*Polygonum aviculare*)

Pale Persicaria (*Polygonum lapathifolium*)

Parsley-piert (*Aphanes arvensis*)

Pineapple weed (*Chamomilla suaveolens*)

Red Dead-nettle (*Lamium purpureum*)

Redshank (*Polygonum persicaria*)

Scarlet Pimpernel (*Anagallis arvensis*)

Scented Mayweed (*Chamomilla recutita*)

Scentless Mayweed (*Matricaria perforata*)

Shepherd's-purse (*Capsella bursa-pastoris*)

Corn Spurrey (*Spergula arvensis*)
Fat Hen (*Chenopodium album*)
Field Penny-cress (*Thlaspi arvense*)
Field Speedwell (*Veronica persicae*)
Forget-me-not (*Myosotis arvensis*)
Fumitory (*Fumaria officinalis*)

Smooth Hawks-beard (*Crepis capillaris*)
Smooth Sow-thistle (*Sonchus oleraceus*)
Spurge (*Euphorbia spp*)
Stinking Chamomile (*Anthemis spp*)
Tare species (*Vicia spp*)
Wild Radish (*Raphanus raphanistrum*)

Established annual broad-leaved weeds at 5.0 l/ha

Small Nettle (*Urtica ureus*)
Volunteer Oilseed Rape (*Brassica napus*)

Established perennial broad-leaved weeds at 5.0 l/ha

Colt's-foot (*Tussilago farfara*)
Common Dandelion (*Taraxacum officianale*)
Corn Mint (*Mentha arvensis*)
Cow Parsley (*Anthriscus sylvestris*)
Creeping Thistle (*Cirsium arvense*)
Curled Dock (*Rumex crispus*)
Field Bindweed (*Convolvulus arvensis*)

Greater Plantain (*Plantago major*)
Hoary Cress (*Cardaria draba*)
Meadow Buttercup (*Ranunculus acris*)
Perennial Nettle (*Urtica dioica*)
Perennial Sow-thistle (*Sonchus arvensis*)
White Clover (*Trifolium repens*)

Established annual grassweeds at 3.0 l/ha

Annual Meadow-grass (*Poa annua*)
Black-grass (*Alopecurus myosuroides*)
Loose Silky-bent (*Apera specia-venti*)

Sterile Brome (*Bromus sterilis*)
Wild oats (*Avena fatua*)

Established annual grassweeds at 5.0 l/ha

Italian Rye-grass (*Lolium multiflorum*)

Established perennial grassweeds at 5.0 l/ha

Black Bent (*Agrostis gigantea*)
Common Couch (*Elymus repens*)

Perennial Rye-grass (*Lolium perenne*)
Rough Meadow-grass (*Poa trivialis*)

Other established weeds at 5.0 l/ha

Field Horsetail (*Equisetum arvense*)

Annual weeds

Annual grasses and broad-leaved weeds are killed by a single application. PEARL has no residual soil activity and will control only weeds which have emerged at the time of application.

Perennial weeds

Perennial non-rhizomatous grasses (e.g. perennial rye-grass, rough meadow-grass) and broad-leaved weeds are usually well controlled with a single application. Common couch, docks, nettles and other deep-rooted perennials may require two applications of PEARL for control during the growing season.

Rates of use and timing

Apply when weeds are actively growing between 1st March and 30th September.

For optimum results, apply when weeds have at least 2 expanded leaves and are actively growing.

CROP SPECIFIC INFORMATION

Application Equipment	Vehicle-mounted Hydraulic Sprayer		Knapsack Sprayer	
	RATE PER HECTARE	WATER PER HECTARE	RATE PER 100 m2	WATER PER 100 m2
Seedlings of all species. Established annual weeds and grasses as specified in the 'Weeds Controlled' section.	3 litres	200-400 litres	30 ml	4.5 litres
Established annual and perennial weeds and grasses as specified in the 'Weeds Controlled' section.	5 litres	200-400 litres	50 ml	4.5 litres

Band application Preparing sports-turf for line-marking

Line-marking Application equipment	Line-marking machine with 7.5 cm swath		
Type of line	PEARL	Water	Coverage in linear metres
To reinforce existing lines (PEARL 3L/ha)	30 ml	4 litres	1333 m
	120 ml	16 litres	5332 m
To create new lines (PEARL 5L/ha)	50 ml	4 litres	1333 m
	200 ml	16 litres	5332 m

Refer to the "PROBLEM CONTROLLED" section for susceptibility of individual grass species. The reduced dose on existing lines (3 L product/ha) may not give complete kill if re-establishing grasses are beyond the seedling stage.

MIXING AND SPRAYING

Add the recommended quantity of PEARL to the spray tank half-filled with the required volume of clean water. Add the remainder of the water with the sprayer agitation system working gently. Agitate gently before and during spraying.

DO NOT leave the sprayer standing with chemical in it.

On completion of spraying, drain sprayer and wash out thoroughly using water with the addition of a suitable detergent.

COMPATIBILITY

All the requirements or restrictions on other product labels must be adhered to when mixing PEARL. Continuous agitation must be maintained.

COMPANY ADVISORY INFORMATION

This section is not part of the Product Label under REGULATION (EC) No 1107/2009. It provides additional advice on product use at the discretion of the applicant.

Certain weeds may develop resistance to Agrigem Limited's products. Since such circumstances are beyond our control, Agrigem Limited will be under no liability for any resulting loss or damage whatsoever.

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@agrigen.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

Belfast 01232 240503

Birmingham 0121 507 5588

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
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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 (NOx)

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 ³ (TWA)		OES BCS*
1-Methoxy-2-propanol	107-98-2	375 mg/m ³ /100 ppm (TWA)	12 2011	EH40 WEL

1-Methoxy-2-propanol	107-98-2	560 mg/m ³ /150 ppm (STEL)	12 2011	EH40 WEL
1-Methoxy-2-propanol	107-98-2	568 mg/m ³ /150 ppm (STEL)	12 2009	EU ELV
1-Methoxy-2-propanol	107-98-2	375 mg/m ³ /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

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

Acute oral toxicity	LD50 (rat) 1,730 mg/kg
Acute inhalation toxicity	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.
Acute dermal toxicity	LD50 (rat) 593 mg/kg
Skin irritation	Slight irritant effect - does not require labelling. (rabbit)
Eye irritation	Severe eye irritation. (rabbit)
Sensitisation	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.

END OF SAFETY DATA SHEET