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GLUFOSINEX

Reg. no. L11119 Act/Wet 36 of/van 1947
N-AR 2250; W1301718

READ THE LABEL BEFORE USE
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

GROUP	10	HERBICIDE

A non-selective, partly systemic contact herbicide formulated as a water-soluble concentrate, for the control of certain broadleaf weeds, grasses and sedges in crops as indicated as well as industrial sites and unplanted areas.	'n Nie-selektiewe, gedeeltelik-sistemiese kontak onkruiddoder geformuleer as 'n wateroplosbare konsentraat, vir die beheer van sekere breëblaar-, gras-en watergrasonkruide in gewasse soos aangedui sowel as industriële en onbeplante gebiede.

DANGER

Hazard statements
Harmful if swallowed.
May be harmful in contact with skin.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye damage.
May damage fertility or the unborn child.
Causes damage to organs.
May cause damage to organs.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary statements
Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

Glufosinate-ammonium …….. 200 g/L ..... Glufosinaat-ammonium (phosphinic acids) (fosfiensuur)

NET VOLUME/NETTO VOLUME

…… L

REGISTRATION HOLDER/REGISTRASIEHOUER
ADAMA South Africa (Pty) Ltd;
Reg. no. 1992/001741/07
Ground Floor, Simeka House
The Vineyard Office Estate, 99 Jip de Jager Drive
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infocpt@adama.com

In case of poisoning, call the following numbers:
Griffon Poison Information Centre:
+27 82 446 8946 or
Tygerberg Poison Information Centre:
+27 861 555 777
Emergency number:
SPILL TECH: +27 86 100 6366 or +27 83 253 6618

UN no.:3082

Batch number	.....	Lotnommer
Date of Manufacture	.....	Datum van Vervaardiging
Expiry date	……	Vervaldatum

GHS information

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WARNINGS

- Harmful if swallowed.
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- May cause damage to organs.
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- Handle concentrate with care.
- Store in cool place away from food, feed, seed or other agricultural remedies.
- Use of **GLUFOSINEX** in any other way or time as indicated in the "Directions for use" may lead to plant injury or other negative effects.
- Re-entry – Do not enter treated area within one day after treatment unless wearing protective clothing.
- In case of poisoning – CALL A DOCTOR AND MAKE THIS LABEL AVAILABLE TO HIM.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not guarantee that it will be effective under all conditions. The activity and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the weeds against the remedy as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, and the environment or harm to humans or animals or for lack of performance of the remedy concerned due to failure by the user to follow the label instructions, or to the occurrence of conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

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PRECAUTIONS

- Obtain, read and follow all safety instructions before use.
- Avoid breathing (do not breathe) dust/fume/gas/mist/vapours/spray.
- Avoid release to the environment.
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- IF exposed or concerned: Get emergency medical help immediately. Specific treatment.
- IF SWALLOWED: Rinse mouth. Get medical help.
- IF ON SKIN: Wash with plenty water. Specific treatment. Get medical help.
- If skin irritation occurs: Get medical help.
- Take off contaminated clothing and wash it before reuse.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
- Collect spillage.
- Store locked up.
- Dispose of contents/container in accordance with local/regional/national/international Regulations.

- Avoid spray drift onto other crops, grazing, rivers, dams and any area not under treatment.
- Thoroughly wash and rinse spray equipment after use and dispose of wash water where it will not contaminate crops, grazing, rivers and dams.
- Do not apply where the roots of desirable plants can absorb the chemical.
- Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the empty container *three times in succession* with one quarter on the container volume fresh water and decant the rinsate into the spray or mixing tank. Puncture the triple rinsed container and dispose of *via* an approved collector or recycler (www.croplife.co.za).
- Do not bury or donate the container to any other parties that may use it as a container for food or beverages.

RELEVANT SUBSTANCES

Chemical name	w/w %	CAS no.
Glufosinate-ammonium	10–30%	77182-82-2
Propylene glycol monomethyl ether	10–30%	107-98-2 & 1589-47-5
Alkylethersulphate, sodium salt	10–30%	68585-34-2 & 64-17-5

FIRST AID

Take the container label or product name with you when seeking medical attention.

- Inhalation: Remove the patient immediately from the source of poisoning to a cool, well-ventilated area and keep him/her calm and reassured.
- Eye contact: Wash eyes with clean, running water for at least 20 minutes while holding eyelid(s) open. If irritation persists, get medical attention immediately.
- Skin contact: Remove contaminated clothing. Wash contaminated areas with soap and water. If irritation persists, get medical attention immediately.
- Ingestion: Do not induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration. Do not apply mouth-to-mouth respiration. Never give anything by mouth to an unconscious person. Take the patient immediately to the nearest physician and show this label to him/her.

Symptoms of poisoning

Vomiting, Diarrhea, Abdominal pain. Tremors, Hypotension, muscular weakness, Unconsciousness, Coma, Convulsions, respiratory failure. Nausea, Tachycardia. Symptoms may be delayed.

Indication of any immediate medical attention and special treatment needed:

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 haemodialysis may be considered.

Tliere 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.

NOTICE TO THE USER: This agricultural remedy is to be used only according to the directions of this label. It is an offense under the Act to use this product inconsistent with the directions on the label.

RESISTANCE WARNING

For resistance management, **GLUFOSINEX** is a group code 10 herbicide. Any weed population may contain individuals naturally resistant to **GLUFOSINEX** and other group code 10 herbicides. If these herbicides are used exclusively and repeatedly, the resistant weeds may eventually dominate the population. These resistant weeds will probably not be controlled by **GLUFOSINEX** or any group code 10 herbicides.

Since the presence of resistant weeds is difficult to detect prior to herbicide application, it is of the utmost importance that treated areas be inspected at regular intervals to identify the occurrence of herbicide-resistant weeds timeously. ADAMA South Africa (Pty) Ltd will not accept liability for performance failures in the event of a build-up of resistant weeds resulting from inadequate resistance management practices as indicated on the label.

<u>To delay herbicide resistance</u>:

- Avoid the exclusive repeated use of herbicides in the same group code. Alternate or use in tank mix with products from different groups.
- Integrate other control methods (chemical, cultural or biological) in weed control programmes.
- For more information regarding resistance management contact the registration holder of this product.

MODE OF ACTION

10: Inhibition of glutamine synthetase.

DIRECTIONS FOR USE

Use only as directed.

COMPATIBILITY

Compatibility studies have been conducted with **GLUFOSINEX** in combination with MCPA 75 g/kg SG and may therefore safely be mixed together.

Do not combine **GLUFOSINEX** in the spray tank with other chemicals, unless your prior use has shown the combination to be physically compatible and non-injurious.

The compatibility of **GLUFOSINEX** with other products may be influenced by the formulation of the other products involved as well as the quality of the water. Since the formulation of other products may change without the knowledge of ADAMA South Africa (Pty) Ltd. and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application.

MIXING INSTRUCTIONS

SHAKE CONTAINER WELL BEFORE USE.

USE CLEAR CLEAN WATER FOR MIXING AND AVOID WATER WHICH IS CONTAMINATED BY MUD, MINERALS OR ORGANIC MATTER.

METHOD OF APPLICATION

Ground application

Use 300–500 L water/ha depending on size of weeds.

For weeds in the seedling stage (up to 10 cm high), use the lower listed dose. For weeds taller than 10 cm but less than 50 cm use the higher listed dose. For weeds 50 cm and taller increase the volume of water to 800 L/ha without increasing the dose above that of the highest listed one.

Spot spraying

Where spot spraying is conducted, the same recommendations should be followed as for overall spraying and the same concentration of mixture used (15–25 ml/L water). Weeds should be thoroughly wetted with this spray mixture.

Timing of application

CROP	APPLICATION TIMING
Citrus, pome fruit, stone fruit and vines in the Winter Rainfall Region	Commence spraying in late winter or early spring, taking the recommendations for specific weeds into consideration. Follow-up sprays may be needed on perennial weeds or problem broad leaf weeds 4 to 6 weeks after the initial spray unless otherwise indicated. Commence spraying before bud burst in bush and low trellised vines. In the case of high trellises do not spray overhanging foliage or

CROP	APPLICATION TIMING
	green portions of the vines. Do not spray vines which are two years and less in age unless stems are shielded.
Citrus, subtropical fruit, nuts, pome fruit and stone fruit in the Summer Rainfall Region	Commence spraying during late spring when soil moisture is sufficient and weeds are actively growing. Repeat spray 7 to 8 weeks later if necessary.
Industrial sites and unplanted areas in the Summer and Winter Rainfall Regions	Apply when weeds are growing actively and not under stress due to drought or low temperatures. Best results will be achieved if application is made 1 to 3 days after rain has fallen and there is adequate soil moisture for active plant growth.
Sugarcane (Directed post-emergence application in plant and ratoon sugarcane)	**Apply as a directed post-emergence spray between the sugarcane rows** when weeds are growing actively and are not wilted nor under stress due to drought, excessive heat, low temperatures or any other stress inducing factor. **Ensure that the sugarcane foliage is not exposed to any spray drift as the cane will be damaged.**

WEEDS CONTROLLED IN THE WINTER RAINFALL REGION

Annual grasses:

Botanical name	Common name	Rate/ha	Remarks
Avena fatua	common wild oats	5–7.5 L	1. Spray older plants before seed sets. 2. Large established grass (*Ehrharta longifolia*) not adequately controlled. Suppression.
Avena sativa	oats (cover crop)		
Bromus diandrus	ripgut brome		
Bromus unioloides	rescue grass		
Digitaria sanguinalis	crab finger-grass		
Echinochloa crus-galli	barnyard grass		
Ehrharta longifolia	oat-seed grass		
Eleusine indica	goose grass		
Lolium multiflorum	Italian ryegrass	7.5 L	
Poa annua	winter grass	3–5 L	

Botanical name	Common name	Rate/ha	Remarks
Secale cereale	rye (cover crop)	5 – 7.5 L	

Perennial grasses

Botanical name	Common name	Rate/ha	Remarks
Cynodon dactylon	common couch	7.5 L	1. Spray at any stage while actively growing. Repeat if regrowth occurs. 2. Multiple sprays. Spray when adequate leaf area is present for uptake but before the grass forms a recumbent mat.
Paspalum dilatatum	common Paspalum	5–7.5 L	1. Spray at any stage while actively growing. Repeat if regrowth occurs. 2. Big clumps suppressed. 3. Small plants controlled.
Paspalum distichum	couch Paspalum		
Paspalum urvillei	tall Paspalum		
Pennisetum clandestinum	kikuyu	5–7.5 L	Repeat 5- to 8 weeks later if regrowth occurs, 5 L/ha will be sufficient for follow-up sprays.

For the abovementioned perennial grasses, sprays should be repeated when 50–60% regrowth occurs. DO NOT USE LESS THAN 300 L SPRAY MIXTURE/HA. ENSURE GOOD WETTING OF FOLIAGE.

Sedges

Botanical name	Common name	Rate/ha	Remarks
Cyperus esculentus	yellow nutsedge	7.5 L	1. Spray at any stage while actively growing. Repeat if regrowth occurs. 2. Multiple sprays. Spray when adequate leaf area is present for uptake but before the grass forms a recumbent mat.

Broadleaf weeds

Botanical name	Common name	Rate/ha	Remarks
Amaranthus spp.	pigweed	5–7.5 L	A + C
Arctotheca calendula	Cape marigold	5–7.5 L	A
Bidens spp.	blackjacks	5–7.5 L	A. and before plants reach a height of 50 cm.
Centaurea repens	Russian knapweed	3–5 L	A
Chenopodium album	white goosefoot	7.5 L	A + C
Convolvulus arvensis	field bindweed	5–7.5 L	A. Add 1.6kg MCPA 75 g/kg SG/ha. Spray regrowth.
Conyza spp.	fleabane	7.5 L	A + C
Datura spp.	thorn apple	5–7.5 L	A + C
Echium lycopsis	Patterson's curse	3–5 L	C. Spray before flowers form.
Emex australis	spiny Emex	5–7.5 L	B
Erodium moschatum	musk heron's bill	7.5 L	A. Add 1.6kg MCPA 75 g/kg SG/ha if plants have reached 25 cm in height.
Fumaria officinalis	fumitory	3–5 L	B
Geranium molle	cranesbill	7.5 L	A
Gnaphalium luteo-album	jersey cudweed	7.5 L	A
Lactuca serriola	wild lettuce	5–7.5 L	A
Lamium amplexicaule	henbit	3–5 L	A
Lepidium africanum	pepper cress	5–7.5 L	A
Malva parviflora	small mallow	7.5 L	Will suppress young actively growing plants before they reach 25 cm in height.
Medicago polymorpha	bur clover	5–7.5 L	A
Melilotus indica	annual yellow sweet clover	3–5 L	A

Botanical name	Common name	Rate/ha	Remarks
Oenothera stricta	evening primrose	5–7.5 L	A
Oxalis pes-caprae	yellow sorrel	5–7.5 L	B. Repeat sprays when necessary. Suppression only.
Plantago lanceolata	narrow-leaved ribwort	7.5 L	Multiple sprays. Just before or just after flowering. Repeat when there is sufficient leaf area for uptak of herbicide. **Suppression only.** For improved control, add 2.1kg MCPA 75 g/kg SG to 7.5 L **GLUFOSINEX/**ha.
Polygonum aviculare	prostrate knotweed	5–7.5 L	A
Paphanus raphanistrum	wild radish	7.5 L	C. Up to early flowering. After flowering add 2.1kg MCPA 75 g/kg SG to 5 L **GLUFOSINEX/ha.**
Rumex angiocarpus	sheep sorrel	5–7.5 L	A
Senecio spp.	Senecio	3–5 L	A
Sisymbrium thellungii	common wild mustard nightshade	3–5 L	A
Soianum nigrum	sowthistle	5–7.5 L	Spray older plants before fruits ripen.
Sonchus spp.	corn spurry	3–5 L	A
Sperguia arvensis	chickweed	3–5 L	A
Stellaria media	khaki weed	3–5 L	B
Tagetes minuta	stinging nettle	5–7.5 L	A + C
Urtica dioica	field speedwell	3–5 L	C
Veronica persica	broad-leaved purple	3–5 L	
Vicia sativa	vetch	3–5 L	

A = Spray plants before seed sets

B = Spray at any stage while actively growing

C = Before plants reach a height of 25 cm

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WEEDS CONTROLLED IN THE SUMMER RAINFALL REGION

Annual grasses

Botanical name	Common name	Rate/ha	Remarks
Bromus unioloides	rescue grass	5–7.5 L	1. Spray plants before seed sets except rescue grass (Bromus unioloides) and rough lovegrass (*Eragrostis aspera*) 2. For rescue grass (*Bromus unioloides*) and rough lovegrass (*Eragrostis aspera*) repeat when 50% to 60% regrowth occurs.
Digitaria sanguinalis	crab finger-grass		
Echinochloa coiona	marsh grass		
Eleusine indica	goose grass		
Eragrostis aspera	rough iovegrass		
Rhyncheiytrum repens	Natal red-top		
Setaria verticillata	sticky bristle grass		
Sporobolus pyramidalis	cats tail drop seed		
Tragus berteronianus	Small carrotseed grass		
Tragus racemosus	large carrotseed grass		
Urochloa panicoides	herringbone grass		

Perinnial grasses

Botanical name	Common name	Rate/ha	Remarks
Cynodon dactylon	common couch	7.5 L	B. Multiple sprays. Spray when adequate leaf area is present for uptake but before the grass forms a recumbent mat.
Panicum maximum	common buffalo grass	5–7.5 L	B. Repeat at the lower rate if regrowth appears.
Paspalum dilatatum	common Paspaium	5 – 7.5 L	B. Repeat at the lower rate if regrowth appears.
Paspalum paspaloides	couch Paspaium	7.5 L	B. Repeat if regrowth occurs

Botanical name	Common name	Rate/ha	Remarks
Pennisetum ciandestinum	kikuyu	5–7.5 L	B. Repeat 5 to 8 weeks later if regrowth occurs. 5 L/ha will be sufficient for follow-up crops.

For the abovementioned perennial grasses, sprays should be repeated when 50 to 60% regrowth occurs. DO NOT USE LESS THAN 300/SPRAY MIXTURE/HA. ENSURE THOROUGH WETTING OF FOLIAGE.

B= Spray at any stage while actively growing

Sedges

Botanical name	Common name	Rate/ha	Remarks
Cyperus esculentus *Cyperus rotundus* *Kyllinga erecta*	yellow nutsedge purple nutsedge white sedge	7.5 L	Muitiple sprays If nutsedgde is shaded 7.5 g/ha can be expected to give good suppression in the majority of cases if sprayed at 5% flowering under normal growing conditions. Control may be erratic under other situations due to climatic and many other factors influencing growth and herbicide uptake. Regrowth normally occurs. Respray when sufficient leaf area is present (50%) for uptake of herbicide.

Broadleaf weeds

Botanical name	Common name	Rate/ha	Remarks
Acanthospermum hispidum	upright starbur	5–7.5 L	A + C
Alternanthera pungens	khaki bur weed	3–5 L	A
Amaranthus spinosus	thorny pigweed	3.75–5 L	A + C
Amaranthus spp.	pigweed	5–7.5 L	A + C
Bidens pilosa	blackjack	5–7.5 L	A + C
Chenopodium album	white goosefoot	5–7.5 L	A + C

Botanical name	Common name	Rate/ha	Remarks
Chenopodium carinatum	green goosefoot	5–7.5 L	A + C
Commelina benghalensis	Bengal wandering Jew	5– .5 L	B
Conyza bonariensis	Rax-leaf fleabane	5–7.5 L	A + C
Conyza canadensis	horseweed fleabane	7.5 L	A + C
Datura stramonium	thorn apple	5–7.5 L	A + C
Euphorbia hirta	red milkweed	5–7.5 L	B
Fallopia convolvulus	climbing knotweed	3–5 L	A
Galinsoga parviflora	gallant soldier	3–5 L	B
Lepidium africanum	pepper cress	5–7.5 L	A
Oxalis spp.	sorrel	3–5 L	B
Physalis angulata	wild gooseberry	3–5 L	B
Portulaca oleracea	purslane	5–7.5 L	B
Pichardia brasiliensis	tropical Richardia	5–7.5 L	B
Rumex lanceolatus	smooth dock	5–7.5 L	A + C
Schkuhria pinnata	dwarf marigold	5–7.5 L	A
Sida rhombifolia	arrowleaf Sida	5–7.5 L	A. Spray seedlings. Older plants not well controlled.
Tagetes minuta	khaki weed	7.5 L	A + C

A= Spray plants before seed sets

B= Spray at any stage while actively growing

C= Before plants reach a height of 25 cm

ALL REGIONS

Botanical name	Common name	Rate/ha	Remarks
Phragmites australis	common reed	15 L	Apply in 1000 L water per ha when common reed regrowth has reached 1 m height after slashing or burning.

GLUFOSINEX can only be sprayed on common reed where the areas of growth are drained, or where the water systems wherein they grow are closed or confined areas with standing water (dams, pans or vlei). Where contact between **GLUFOSINEX** and adjoining water has been made - DO NOT USE THIS WATER FOR DOMESTIC PURPOSES FOR A MINIMUM PERIOD OF 24 HOURS AFTER APPLICATION.

IMPORTANT NOTES:

1. Seedlings that have not emerged at the time of application will not be controlled or are not damaged. No action via the roots is present.

2. Damage symptoms in the form of yellowing and leaf scorch to the aerial portions of plants commence 7 to 10 days after treatment and maximum control is achieved 2 to 6 weeks after spraying depending on weed spectrum and environmental conditions.

3. Optimum herbicidal action following leaf uptake is obtained under environmental conditions favorable for active plant growth as well as for young growing plants having a large proportion of foliage with a high metabolic rate.

4. The use of **GLUFOSINEX** sprays at the prescribed doses will remove weed competition within orchards etc., for a period of usually not less than 6 weeks in the case of an established weed population, but often greatly in excess of this period, depending upon the weed species, type of weed, stage of development, whether the weeds are annual or perennial as well as upon environmental factors.

5. Irrigation prior to application of **GLUFOSINEX** assists in weed control. DO NOT SPRAY WEEDS UNDER ENVIRONMENTAL STRESS such as drought, low temperatures, waterlogging and salinity as herbicidal action may be affected. This also applies to weeds, which are senescing, or dormant or growing slowly due to other plant stress inducing factors.

6. TWELVE HOURS should be left between spray application and the re-commencement of irrigation where perennials and waxy leafed weeds have been sprayed.

7. In the case of weeds which do not have waxy leaves or in the case of small annual weeds EIGHT HOURS should be left between spray application and re-commencement of irrigation.

8. What has bearing upon irrigation also has bearing upon the effect of rainfall above 5 mm.

9. No impairment of plant growth takes place if crops are planted in soil recently treated with **GLUFOSINEX** as breakdown is rapid.

10. Do not spray when weeds are wet from rain or irrigation.

11. Do not spray if weeds are covered with a heavy layer of mud, dust or debris as may occur when flood irrigation is in use.

12. Green side shoots and suckers may be sprayed and scorched without damage extending to the rest of a fruit tree or vine.

13. Ensure that direct spray or drift is kept out of contact with green leaves, active buds and fruit.

14. In the case of young trees with green stems, these should be protected, or spray shields used to prevent damage to non-suberised bark.

15. It is recommended that low hanging branches should be trimmed to avoid leaf and fruit contact as well as to prevent interference with weed control.

16. Bananas should be at least 2 years old before spray is allowed to come into contact with the plants.

Only the bases of the pseudostems should be permitted to come in contact with the spray.

NOTE: **GLUFOSINEX** controls the abovementioned weed species alone, or in tank mixes with other products as indicated. Other weed species that were not present during the development trials with the product, may possibly also be controlled to a certain degree. The registration holder does not accept any responsibility for unlisted weeds.