SPEAR® 240 SL

Reg. no. L9101 Act/Wet 36 of/van 1947

A water soluble non-selective herbicide for the control of perennial and annual weed plants in afforestation, non-crop and industrial areas.

'n Water oplosbare nie-selektiewe onkruiddoder vir die beheer van eenjarige- en meerjarige plante in bosbou, industriële persele en nie-gewasgebiede.

HRAC HERBICIDE GROUP CODE	B	HRAC ONKRUIDDODERGROEPKODE

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

Imazapyr (imizadolinone)......................	240 g/ℓ	.......................Imasapir (imisadolinoon)

NET VOLUME/NETTO VOLUME

.... ℓ

REGISTRATION HOLDER/REGISTRASIEHOUER

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SPEAR® is the registered trademark of a company of the ADAMA GROUP.
SPEAR® is die geregistreerde handelsmerk van 'n maatskappy van die ADAMA GROEP.

CONTACT IN EMERGENCY/KONTAK IN NOOD

Griffon Poison Information Centre: +27 82 446 8946

Batch number	....	Lotnommer
Date of Manufacture	....	Datum van Vervaardiging

UN no.: 3082

WARNINGS

- Harmful if swallowed.
- May irritate skin.
- Store in a cool dry place away from food, feedstuffs, fertilizer and other agricultural products.
- Keep out of reach of children, uninformed persons and animals.
- **Re-entry:** Do not enter treated area until spray deposit has dried unless wearing protective clothing.

Although this remedy has been extensively tested under a variety of conditions the registration holder does not warrant that it will be effective under all conditions. The activity and efficacy of the product may be affected by factors such as abnormal 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, the environment or harm to man or animal, or for lack of performance of the remedy concerned due to the failure of 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.

Precautions

- Do not inhale fumes or spray mist.
- Wear protective clothing e.g. face shield, gloves and boots when handling concentrate.
- Avoid skin and eye contact. Wash with soap and cold water after accidental skin contact. Flush eyes with clean running water after accidental eye contact.
- Wash contaminated clothing with water and soap.
- Do not eat, drink or smoke when mixing or applying or before hands and face have been washed.
- Avoid drift of spray to other crops, grazing, rivers, dams or any other area that is not under treatment.
- Clean the applicator after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- 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 container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank.
- Destroy the empty container and do not re-use for any other purpose.
- Prevent contamination of food, feedstuffs, drinking water and eating utensils.

Resistance warning

For resistance management **SPEAR® 240 SL** is classified as a HRAC group code B herbicide. Any weed population may contain individuals which are naturally resistant to **SPEAR® 240 SL** and other group code B herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used continuously and exclusively. These resistant weeds may not be controlled by **SPEAR® 240 SL** or any group code B herbicides.

To delay resistance:

- Avoid exclusive repeated use of herbicides from the same herbicide group code. Alternate or tank mix with registered products from different herbicide group codes and a different mode of action.
- Integrate other control methods (chemical, cultural, biological) into weed control programmes

For specific information on resistance management contact the registration holder of this product.

Use restrictions

- Use low pressure nozzles and anti-drift agents to avoid drift onto non-target plants.
- Avoid applying **SPEAR® 240 SL** within the root zone of non-target plants. When applying **SPEAR® 240 SL** on stumps, avoid run off. Residues in soil will negatively affect seedlings and other established plants.
- Use **SPEAR® 240 SL** only on industrial areas, forestry and non-crop areas only.

After treating Eucalyptus cut stumps, observe the following waiting periods before re-planting plants listed below:

Type of crop	Safety period
Eucalyptus spp. (blue gums) on light sandy soils	12 months
Eucalyptus spp. (blue gums) on heavier soils	4 months
Pinus spp. (pines seedlings planted in same row with old stumps)	1 month
Pinus spp. (pines seedlings planted in the inter row space with old stumps)	Nil
Wattle	Nil

DIRECTIONS FOR USE

Use only as directed.

Compatibility

It is advisable to always carry out a physical compatibility test prior to application when **SPEAR® 240 SL** is tank mixed with other pesticides. The restrictions on the labels of the products with which **SPEAR® 240 SL** is mixed should be adhered to.

Application

SPEAR® 240 SL can be applied by any suitable medium or high volume applicator provided it is equipped with an efficient agitation mechanism, can distribute the spray mixture evenly over the target area and is correctly calibrated. **SPEAR® 240 SL** can be applied either as a pre-emergence or post-emergence although it is more effective when applied post-emergence to actively growing plants.

Rain-fast period for **SPEAR® 240 SL** is two hours. Rain falling after two hours of application will not affect the effectiveness of the herbicide. **SPEAR® 240 SL** is taken up through foliage and roots and moves quickly to the meristematic tissue. In the case of control of trees, cut stump applications of **SPEAR® 240 SL** are considered more effective than foliar applications since the product is applied precisely on the target plant. Under good weather conditions, when plants are actively growing, complete kill of plants can be expected within 3 months after application of **SPEAR® 240 SL**, while in dry conditions complete kill is achieved only after nine months due to slow plant growth. **SPEAR®**

240 SL residual action is determined by soil moisture, dosage rate used and the susceptibility of the target weed species.

APPLICATION RATES

1. Weed control on industrial sites, roadsides, railway reserves and non-crop areas

TARGET REGION	DOSAGE (ℓ/ha)	REMARKS
Winter rainfall areas	3–4	Apply full cover spray. Depending on density of vegetation, use 300–1 000 ℓ/ha water. Use high rates where longer residual is required, where common couch (*Cynodon dactylon)* and tufted perennial grasses are present and on coarse soils with less than 10 % clay. **SPEAR® 240 SL controls yellow nutsedge, most grasses and herbaceous broadleaf weeds at 4 ℓ/ha.**
Summer rainfall areas (inland)	4–6	
Summer rainfall areas (coastal)	6–8	
Summer rainfall areas (coal and ash)	6–8	

Weed spectrum

The following grass weeds are normally controlled by SPEAR® 240 SL:

SCIENTIFIC NAME	COMMON NAME
Chloris virgata	Feathertop Chloris
Cynodon dactylon	Common couch
Cynodon aethopicus	Star grass
Digitaria sanguinalis	Crab finger grass
Eleusine coracana	Goose grass
Eragrostis spp.	Lovegrasses (control of these weed species variable)
Hyparrhenia hirta	Common thatching grass
Panicum maximum	Common buffalo grass
Paspalum dilatatum	Common paspalum
Pennisetum clandestinum	Kikuyu
Rhynchelytrum repens	Natal red-top
Sorghum halepense	Johnson grass
Sporobolus africanus	Ratstail dropseed
Themeda triandra	Red grass
Urochloa panicoides	Herringbone grass

The following broadleaf weeds are normally controlled by SPEAR® 240 SL:

SCIENTIFIC NAME	COMMON NAME
Asclepias physocarpa	Milkweed
Bidens pilosa	Common black jack
Chenopodium album	White goosefoot
Conyza albida	Tall fleabane
Plantago major	Broadleave ribwort
Portulaca oleracea	Purslane
Schkuhria pinnata	Dwarf marigold
Tagetes minuta	Tall khaki
Tribulus terrestris	Common dubbeltjie

2. Cut stump applications of SPEAR® 240 SL

PLANT SPECIES	DOSAGE (mℓ/10 ℓ water)	REMARKS
Eucalyptus (*Eucalyptus grandis*)	200	Treat sapwood areas of freshly cut stumps using low pressure equipment such as a dosing gun or knapsack sprayer. The application equipment should deliver not less than 10 mℓ per 100 mm diameter of stump. Avoid applying mixture at high pressure.
Guava (*Psidium guajava*)	520	
Lantana (*Lantana camara*)	80	
Bug weed (*Solanum mauritianum*)	80	
Ink berry (*Cestrum laevigatum*)	80	
Ouhout (*Leucosidea sericea*)	125	
Triffid weed (*Chromolaena odorata*)	80	
Syringa (*Melia azedarach*)	125	

3. Foliar applications of SPEAR® 240 SL

WEED SPECIES	DOSAGE	REMARKS
Common bulrush *(Typha capensis)* **Common reed** (*Phragmites australis*)	**SPEAR® 240 SL** alone at 250 mℓ/100 ℓ water (0.25 %) ***OR*** **SPEAR® 240 SL** 2–3 ℓ/ha ***PLUS*** glyphosate (360 g a.i./ℓ) 7.5 ℓ/ha	Apply full cover spray up to run-off point. Apply before flowering. Apply **SPEAR® 240 SL** in a tank mix with glyphosate for enhanced control. Apply when weeds are actively growing in early summer. Application can be repeated same season or next season when necessary. Avoid spraying over the water to be used for irrigation purposes.

WEED SPECIES	DOSAGE (mℓ/10 ℓ water)	REMARKS
Bracken fern (*Pteridium aquilinum*)	25	Apply full cover spray to actively growing plants. Spray should be applied up to point of run-off.
Katbos (*Asparagus spp.*)	25	
Ribbon bristle grass (*Setaria megaphylla*)	25	
Lantana (*Lantana camara*)	80	

WAARSKUWINGS

- Skadelik indien ingesluk word.
- Mag velirritasie veroorsaak.
- Berg in 'n koel, droë plek weg van voedsel, voer, misstowwe en ander landbouprodukte.
- Hou buite bereik van kinders, oningeligte persone en diere.
- **Herbetreding:** Moet nie die behandelde gebied betree voordat die spuitstof droog is nie tensy beskermende oorklere gedra word.

Alhoewel hierdie middel omvattend onder 'n groot verskeidenheid toestande getoets is, waarborg die registrasiehouer nie dat dit onder alle toestande doeltreffend sal wees nie. Die werking en doeltreffendheid daarvan kan beïnvloed word deur faktore soos abnormale grond, klimaats- en bergingstoestande, kwaliteit van die verdunningswater, verenigbaarheid met ander stowwe wat nie op die etiket aangedui word nie en die voorkoms van weerstand van die onkruide teen die betrokke middel sowel as die tyd en akkuraatheid van toediening. Verder aanvaar die registrasiehouer nie verantwoordelikheid vir skade aan gewasse, plantegroei en die omgewing of nadelige invloede op mens of dier of vir 'n gebrek aan prestasie van die betrokke middel as gevolg van versuim van die gebruiker om etiketaanwysings na te kom, of as gevolg van die ontstaan van toestande wat nie kragtens die registrasie voorsien kon word nie. Raadpleeg die verskaffer in die geval van enige onsekerheid.

Voorsorgmaatreëls

- Moet nie dampe of die sproeinewel inasem nie.
- Dra beskermende klere bv. gesigskerm, handskoene en skoene as konsentraat hanteer word.
- Vermy vel- en oogkontak. Was dadelik met koue water en seep indien dit per ongeluk met vel in aanraking kom, in geval van oogkontak spoel oë uit met skoon lopende water.
- Was besoedelde klere met seep en water.
- Moenie eet, drink of rook tydens vermenging of toediening of voordat hande en gesig gewas is nie.
- Verhoed dat die spuitnewel wegdryf oor ander gewasse, weiding, riviere, damme en gebiede wat nie behandel moet word nie.
- Maak spuitapparaat skoon na gebruik en gooi waswater weg waar dit nie gewasse, weiding, riviere, damme of boorgate sal besoedel nie.
- Keer die leë houer om oor die spuit- of mengtenk en laat dit dreineer vir ten minste 30 sekondes nadat die vloei tot 'n gedrup verminder het. Spoel die leë houer daarna drie keer uit met 'n volume water gelykstaande aan minstens 10 % van die volume van die houer. Gooi die spoelwater in die meng- of spuittenk voor die leë houer vernietig word.
- Vernietig die leë houer deur gate daarin te maak en moet dit vir geen ander doel gebruik nie.
- Verhoed besoedeling van voedsel, voer, drinkwater en eetgerei.

Weerstandswaarskuwing

Vir weerstandsbestuur is **SPEAR® 240 SL** as 'n HRAC groepkode B onkruiddoder geklassifiseer. Enige onkruidpopulasie mag individue bevat wat 'n natuurlike weerstand teen **SPEAR® 240 SL** en ander groepkode B onkruiddoders het. Die weerstandbiedende individue kan uiteindelik die onkruidpopulasie oorheers as hierdie onkruiddoders herhaaldelik gebruik word. Hierdie

weerstandbiedende onkruide mag dalk nie deur **SPEAR® 240 SL** of ander groepkode B onkruiddoders beheer word nie.

Om onkruiddoderweerstand te vertraag:

- Vermy die uitsluitlike herhaalde gebruik van onkruiddoders van dieselfde onkruiddodergroepkode.Wissel af, of gebruik in tenkmengsels met middels van ander groepkodes.
- Integreer beheermetodes (chemiese, bewerking, biologies) in onkruid beheerprogramme.

Vir meer spesifieke inligting rakende weerstandsbestuur, skakel die registrasiehouer van hierdie produk.

Gebruiksbeperkings

- Gebruik laedruk spuitstukke en teenwegdryfmiddels om wegdrywing na nie-teiken plante te voorkom.
- Vermy die toediening van **SPEAR® 240 SL** binne die wortelsone van nie-teiken plante. Vermy afloop wanneer **SPEAR® 240 SL** op stompe toegedien word. Residue in die grond sal saailinge en ander gevestigde plante negatief beïnvloed.
- **SPEAR® 240 SL** mag alleenlik in bosbou, industriële persele en nie-gewas gebiede gebruik word.

Nadat bloekomstompe behandel is moet die volgende wagperiodes nagekom word voordat die plante wat hieronder gelys is, herplant word:

Type gewas	**Veiligheidsperiode**
Eucalyptus spp. (bloekom) op ligte sanderige gronde	12 maande
Eucalyptus spp. (bloekom) op swaarder gronde	4 maande
Pinus spp. (dennesaailinge geplant in dieselfde ry as ou stompe)	1 maande
Pinus spp. (dennesaailinge geplant in tussenryspasie van ou stompe)	Geen
Wattel	Geen

GEBRUIKSAANWYSINGS

Gebruik alleenlik soos voorgeskryf.

Verenigbaarheid

Dit is wenslik dat 'n fisiese verenigbaarheidstoets altyd gedoen word voor toediening, indien tenkmengsels met **SPEAR® 240 SL** gemaak gaan word. Die aanwysings op die etikette van die produkte wat met **SPEAR® 240 SL** gemeng gaan word, moet altyd nagekom word.

Toediening

SPEAR® 240 SL kan met enige geskikte medium- of hoëvolume spuitapparaat toegedien word wat korrek gekalibreer is, 'n doeltreffende roersisteem het en in staat is om die spuitmengsel eweredig oor die teikengebied te versprei. **SPEAR® 240 SL** kan vooropkom of na-opkom toegedien word. Dit is egter meer doeltreffend wanneer dit na-opkom aan aktief groeiende plante toegedien word.

SPEAR® 240 SL twee ure na toediening is reënbestand. Reën twee ure na toediening sal nie die doeltreffendheid van die onkruiddoder negatief beïnvloed nie. **SPEAR® 240 SL** word deur die blare en wortels opgeneem en beweeg vinnig na die meristeemweefsel. Wanneer bome beheer moet word, is stompbehandelings met **SPEAR® 240 SL** van afgekapte of afgesaagde bome meer doeltreffend aangesien dit noukeurig op die teikenplant toegedien word. Wanneer weerstoestande gunstig is en plante aktief groei, kan algehele beheer van plante binne 3 maande na toediening van **SPEAR® 240 SL** verwag word. Onder droë weerstoestande kan algehele beheer eers na nege maande voorkom aangesien die plante stadiger groei. **SPEAR® 240 SL** se nawerking word bepaal deur grondvog, dosis gebruik asook die vatbaarheid van die betrokke onkruidspesies vir die onkruiddoder.

TOEDIENINGSHOEVEELHEDE

1. Onkruidbeheer op industriële persele, padskouers, spoorwegwerwe, nie-gewas gebiede

<table>
<tr><th>TEIKENGEBIED</th><th>DOSIS (ℓ/ha)</th><th>OPMERKINGS</th></tr>
<tr><td>Winterreënvalgebied areas</td><td>3–4</td><td rowspan="4">Dien ′n volle dektoediening toe. Gebruik 300–1,000 ℓ/ha water afhangende van die digtheid van die plante.
Gebruik die hoër dosis waar langer nawerking verlang word, waar kweekgras en meerjarige polgrasse aanwesig is en op growwe gronde met minder as 10 % klei.
SPEAR® 240 SL beheer geeluintjie, meeste grasse en kruidagtige breëblaaronkruide teen 4 ℓ/ha.</td></tr>
<tr><td>Somerreënvalgebied (binneland)</td><td>4–6</td></tr>
<tr><td>Somerreënvalgebied (kus)</td><td>6–8</td></tr>
<tr><td>Somerreënvalgebied (steenkool en as)</td><td>6–8</td></tr>
</table>

Onkruidspektrum

Die volgende grasse word gewoonlik deur SPEAR® 240 SL beheer:

WETENSKAPLIKE NAAM	GEWONE NAAM
Chloris virgata	Witpluim-Chloris
Cynodon dactylon	Gewone kweek
Cynodon aethopicus	Stergras
Digitaria sanguinalis	Kruisvingergras
Eleusine coracana	Jongosgras
Eragrostis spp.	Eragrostis (wisselvallige beheer)
Hyparrhenia hirta	Dekgras
Panicum maximum	Gewone buffelsgras
Paspalum dilatatum	Gewone paspalum
Pennisetum clandestinum	Kikoejoe
Rhynchelytrum repens	Natalse rooipluim
Sorghum halepense	Johnsongras
Sporobolus africanus	Saadgras
Themeda triandra	Rooigras
Urochloa panicoides	Tuin-Urochloa

Die volgende breëblaaronkruide word gewoonlik deur SPEAR® 240 SL beheer:

WETENSKAPLIKE NAAM	GEWONE NAAM
Amaranthus hybridus	Gewone misbredie
Asclepias physocarpa	Melkbos
Bidens pilosa	Gewone knapsekêrel
Chenopodium album	Withondebossie
Conyza albida	Vaalskraalhans
Plantago major	Grootweëblaar
Portulaca oleracea	Porslein
Schkuhria pinnata	Kleinkakiebos
Tagetes minuta	Kakiebos
Tribulus terrestris	Dubbeltjie

2. Stompbehandelings met SPEAR 240 SL

PLANTSPESIES	DOSIS (mℓ/10 ℓ water)	OPMERKINGS
Bloekom (*Eucapyptus grandis*)	200	Behandel die saphout van pas afgesaagde of gekapte stompe. Gebruik laedruk toerusting soos 'n doseerspuit of rugsakspuit. Die toedieningstoerusting moet nie minder nie as 10 mℓ per 100 mm stompdeursnit lewer. Vermy toediening teen te hoë druk.
Koejawel (*Psidium guajava*)	520	
Lantana (*Lantana camara*)	80	
Luisboom (*Solanum mauritianum*)	80	
Inkbessie (*Cestrum laevigatum*)	80	
Ouhout (*Leucosidea sericea*)	125	
Paraffienbos (*Chromolaena odorata*)	80	
Sering (*Melia azedarach*)	125	

3. Blaartoedienings met SPEAR® 240 SL

PLANTSPESIES	DOSIS	OPMERKINGS
Gewone papkuil (*Typha capensis*) **Gewone fluitjiesriet** (*Phragmites australis*)	**SPEAR® 240 SL** alleen teen 250 mℓ/100 ℓ water (0.25 %) ***OF*** **SPEAR® 240 SL** 2–3 ℓ/ha ***PLUS*** glifosaat (360 g a.b./ℓ) 7.5 ℓ/ha	Dien 'n volle dektoediening net voor blom toe tot punt van afloop. Dien **SPEAR 240 SL** in 'n tenkmengsel met glifosaat vir verbeterde beheer. Dien toe in die vroeë somer wanneer onkruide aktief groei. Die toediening kan, soos benodig, dieselfde of die volgende seisoen herhaal word. Vermy spuit van water wat vir besproeiing gebruik gaan word.
PLANTSPESIES	**DOSIS (mℓ/10 ℓ water)**	**OPMERKINGS**
Adelaarsvaring (*Pteridium aquilinum*)	25	Dien 'n volle dektoediening toe tot punt van afloop aan aktief groeiende plante.
Katbos (*Asparagus spp.*)	25	
Breëblaarborselgras (*Setaria megaphylla*)	25	
Lantana (*Lantana camara*)	80	