

SAHARA

Reg. No. / Nr L11905 Act No. 36 of 1947 / Wet Nr 36 van 1947

GROUP 2 HERBICIDE

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

A non-selective, systemic herbicide with soil 'n Nie-selektiewe, onkruidodder met grondaksie, persistence, for the control of problem / vir die beheer van probleem / indringerplante en invader plants and for use in forestry vir gebruik in bosbou situasies. situations.

Active Ingredient / Aktiewe Bestanddeel

Imazapyr (Imidazolinone) contains 240 g a.i. per l Imasapir (Imidasolinoon)



Hazard Statements

Causes serious eye damage.
Harmful to aquatic life with long lasting effects.

Precautionary Statements

Wash hands thoroughly after handling. Do not touch eyes.
IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical help.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

DANGER



REGISTRATION HOLDER / REGISTRASIEHOUER:

Agritech Bioscience (Pty) Ltd / (Edms) Bpk t/a Carabiner
Reg. No. 2008/004392/07
6 Antwerp Street, Apex, Benoni,
1540
South Africa / Suid-Afrika



Batch No./Date manufactured/Expiry date: Refer to details printed on container

UN No. / VN Nr. Not regulated

Net volume L Netto Volume

In case of poisoning, call the following numbers:

Poisons Information Helpline: +27 861 555 777
EMERGENCY NUMBER: +27 82 446 8946

WARNINGS

- GHS Hazard statements

Causes serious eye damage. Harmful to aquatic life with long lasting effects.
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- **The misuse or misapplication of this product may cause unwanted long term damage to vegetation. It is important to adhere to all WARNINGS, USE RESTRICTIONS and DIRECTIONS FOR USE in this label.**
- Store in the original container in a cool, dry, well-ventilated place out of direct sunlight.
- Store under lock and key and out of reach of children, uninformed persons, and animals.
- **RE-ENTRY:** Do not enter treated area within 2 days after treatment unless wearing protective clothing.
- **In case of poisoning immediately call a physician and make this label available to him/her.**

DISCLAIMER

Although this remedy has been tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions, because the action 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 concerned 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 occurrence of conditions, which could not have been foreseen in terms of the registration. Consult the supplier, in the event of any uncertainty.

PRECAUTIONS

- GHS Precautionary statements

If medical advice is needed, have product container or label at hand. Keep out of reach of children. Read carefully and follow all instructions. Wash hands thoroughly after handling. Do not touch eyes. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help. Dispose of contents/container in accordance with local / regional / national / international regulations.
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- **OPERATOR PROTECTION**
 - Handle with care.
 - Do not inhale spray mist or fumes.
 - Wash with soap and water after use and accidental skin contact as well as contact with contaminated clothing.
 - Should eye contact occur, flush the eyes with plenty of clean water for 15 minutes holding eyelids open. Remove contact lenses after 1-2 minutes of irrigation. **Seek medical attention.**
 - Avoid skin and eye contact by wearing rubber gloves and face shield when handling the product.
 - Wash contaminated clothing after use.

- Do not eat, drink, or smoke while mixing or applying the product or before washing hands and face and changing clothes.
- ENVIRONMENTAL PROTECTION
 - Prevent spray drift onto other non-target vegetation, crops, grazing, rivers, dams, or areas not under treatment.
 - Do not contaminate dams, rivers, lakes, or any other water sources.
 - Clean the applicator directly after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams, and boreholes.
- STORAGE AND DISPOSAL
 - Store under lock and key in the original container in a cool, dry place out of direct sunlight.
 - Store away from food, feed, fertilizer, and seed.
 - **KEEP OUT OF SIGHT AND REACH OF CHILDREN**, uninformed persons, untrained personnel, unauthorised personnel and animals.
 - Do not allow access to this product by children, uninformed persons, untrained personnel, unauthorised personnel, or animals under any circumstances.
 - Prevent contamination of food, feeds, drinking water and eating utensils.
 - Containers and packages must be completely emptied before disposal.
 - **TRIPLE RINSE THE EMPTY CONTAINER AS FOLLOWS:** Invert the empty container over the spray or mixing tank and drain for at least 30 seconds after the flow has slowed down to dripping. Thereafter, rinse the empty container three times in succession with one quarter of the container volume fresh water and decant the rinsate into the spray or mixing tank. Destroy the triple rinsed container by perforation and flattening and do not use for any other purpose. Store appropriately until it can be disposed of via an approved collector or recycler authorised to recycle or destroy waste in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and the relevant waste management regulations. Empty containers and product should not be burnt. Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.
 - **DO NOT REUSE THE CONTAINER FOR ANY OTHER PURPOSE.**

RELEVANT SUBSTANCES

Hazardous Ingredients	Concentration (w/v)
Imazapyr-isopropylammonium	>26-<28%
Ethylene glycol	>1-<10%
Surfactant containing Alcohols, C12-14, ethoxylated	>1-<10%

FIRST AID TREATMENT

If medical advice is needed, have product container or label at hand. Provide medical personnel with the container, label or safety data sheet (SDS) when seeking medical attention.

General Information: Remove patient from exposed area. Never give fluids or induce vomiting if the patient is unconscious or is having convulsions.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). **Seek medical attention.**

Skin contact: Contaminated clothing and shoes should immediately be removed, and the body, clothes and shoes should be flushed with large amounts of water. Wash thoroughly with plenty of water. Wash

contaminated clothing before re-use. Persons providing first aid must wear gloves to avoid self-contamination. **Seek medical attention.**

Eye contact: Flush eyes immediately with plenty of clean, room temperature water for at least 15 minutes holding eyelids open. Remove contact lenses if present, after the first 1-2 minutes, then continue rinsing eyes. **Seek medical attention immediately.**

Ingestion: Rinse mouth immediately with clean water and have the patient sip a glass of water if the patient is alert and able. Do NOT induce vomiting unless instructed to do so by a medical professional. Never induce vomiting or give anything by mouth to a victim who is unconscious or is having convulsions. **Seek medical attention.**

No specific antidote known. Treat symptomatically and supportively.

RESISTANCE MANAGEMENT WARNING STATEMENT

For resistance management, **SAHARA** is a group code 2 herbicide. Any weed population may contain individuals naturally resistant to **SAHARA** and other group code 2 herbicides. These resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds may not be controlled by **SAHARA** or any other group code 2 herbicide.

To delay herbicide resistance:

- Avoid the exclusive repeated use of herbicides from the same herbicide group code. Alternate, or tank mix, with registered products from different herbicide group codes. Large numbers of healthy surviving weeds can be an indication that resistance is developing. Efforts should be taken to prevent seed set of these survivors.
- Integrate other control methods (such as chemical, cultural, biological) into weed control programmes.
- Refer to the Herbicide Resistance Action Committee for information regarding any applicable resistance management of group 2 herbicides at <https://hracglobal.com/> for more information.
- Avoid distribution of the resistant species to adjacent fields by implements during the cultivation period.

As the occurrence of resistance cannot be forecast, users are advised to keep all treated crops under close observation. If the treatment is not effective following the use of **SAHARA** as recommended, a resistant strain may be present. If a resistant strain is positively identified, consideration should be given to the prompt use of a herbicide with a different mode of action against which no record of resistance exists.

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

The presence of resistant weeds is difficult to detect prior to use and therefore neither the Registration Holder nor the Distributor can accept responsibility for any losses as a result of **SAHARA** not controlling resistant weeds. Do not apply **SAHARA** alone in situations where weed resistance has been confirmed. Sub-standard application of **SAHARA** or other group code 2 herbicides will lead to inferior weed control and may assist in development of herbicide resistance. It is of the utmost importance to inspect treated areas at regular intervals in order to identify the occurrence of herbicide-resistant weeds timeously.

MODE OF ACTION

SAHARA is non-selective and is therefore suitable for the control of a wide range of annual and perennial grasses and broadleaf weeds occurring in industrial sites and on non-crop land.

The residual effect of **SAHARA** is influenced by soil type, total seasonal rainfall, weed susceptibility, density of the weed population under treatment, and the rate of application. Effective residual control over a 3 – 9 month period can be expected under favourable conditions.

SAHARA, which is root and foliar absorbed, provides both pre- and post-emergence weed control. However, optimum results are obtained when the product is applied directly onto actively growing weeds. In this case, rain which occurs two hours after application will not have an adverse effect on the efficacy.

Although **SAHARA** is slow acting, plant growth usually stops soon after application. Under dry conditions, hardy weeds may take several months to kill.

Imazapyr is a systemic, contact and residual herbicide, absorbed by the foliage and roots, with rapid translocation in the xylem and phloem to the meristematic regions, where it accumulates.

DIRECTIONS FOR USE - Use only as directed.

NOTICE TO USER: This agricultural remedy is to be used only in accordance with the instructions on the label. It is an offence under Act No. 36 of 1947 to use this agricultural remedy for any purpose in a manner contrary to the directions on the label.

WAITING PERIOD FOR FOLLOW-UP CROPS

- **Waiting periods in Forestry usage:**

Allow the stipulated periods to pass before replanting the listed forest crop species. This applies to replant situations following cut stump treatments after clear felling *Eucalyptus* plantations. A test planting is recommended in all cases.

RE-PLANT SPECIES	COMMENTS	WAITING PERIOD
Gum trees (<i>Eucalyptus</i> spp.)	<i>Eucalyptus</i> seedlings should only be replanted into compartments with SAHARA -treated stumps after 120 days have elapsed from the treatment. This applies to the normal forest situations with heavier soils.	120 days
	A waiting period of one year is recommended for soils consisting mostly of sand and with low clay and organic matter contents. These soils occur in northern Kwa-Zulu-Natal and along the eastern seaboard. Do not use when spray drift may occur or if SAHARA may be deposited onto the foliage of non-target plants in the area in any other way.	1 year
Pine trees (<i>Pinus</i> spp.)	Wherever pine seedlings are to be planted close to the treated gum stumps, a restraint period of at least 30 days should be applied to avoid possible effects of drift or run-off from the treated stumps. Where the pine seedlings are to be planted between the old rows of <i>Eucalyptus</i> stumps, they may be planted immediately after clear felling is complete. Do not use when spray drift may occur or if	Up to 30 days

	SAHARA may be deposited onto the foliage of non-target plants in the area in any other way.	
Wattle trees (<i>Acacia</i> spp.)	Only use SAHARA after seedlings are well established. Wattle seedlings may be transplanted immediately after felling and treating <i>Eucalyptus</i> cut stumps. Do not use when spray drift may occur or if SAHARA may be deposited onto the foliage of non-target plants in the area in any other way.	None

- Where thinning within a *Eucalyptus* compartment is to be carried out, **SAHARA** should not be used. Foliar applications of **SAHARA** must not be applied in *Eucalyptus* compartments.
- In pine and wattle plantations, **SAHARA** should only be used when saplings are well established and where there is no chance of drift or other sources of **SAHARA** landing on leaves of the crop plants.
- The waiting periods specified above apply to normal forest replant conditions. Where dissipation of residual **SAHARA** is in any way retarded or where high levels exist in the root zone of transplanted seedlings (e.g., drought, dosage variations and/or foliar applications), the waiting period on planting should be extended.

COMPATIBILITY

The compatibility of **SAHARA** with other products depends on the formulations of the respective products as well as the quality of the spray water to be used. As formulations change from time to time it is recommended that a physical compatibility test be done prior to the tank mixture being made. **SAHARA** is not compatible with oil-based adjuvants, including diesel. **SAHARA** may be used in a tank mix with an anti-drift agent. When **SAHARA** is used in tank mixture with any other agricultural remedy, all **WARNINGS**, **PRECAUTIONS** and **DIRECTIONS FOR USE** mentioned on that label must be adhered to.

USE RESTRICTIONS

- Do not apply **SAHARA** on or near desirable vegetation or within their root zones, as severe injury or death may occur. Also ensure that surface run-off, in the case of heavy downpours, does not wash herbicide laden soil particles to sensitive areas such as open water or desirable vegetation such as trees or cultivated lands.
- Prevent spray from drifting onto off-target areas, open water or desirable vegetation, by using low-pressure nozzles and anti-drift spray additives.
- Do not apply **SAHARA** to any crop or situation not mentioned in this instruction leaflet.
- Only apply **SAHARA** using an accurate and safe application technique.
- If **SAHARA** is used in a tank mix with other recommended remedies, consideration should be given to the restrictions of those respective products.
- Do not allow **SAHARA** solutions to run off onto the soil from treated stumps. Although this product shows little horizontal or vertical movement in soil, any action to prevent movement of the active ingredient onto soil will minimize the risk of unwanted contact with crops or other non-target plants.
- When invaders and other weeds are to be controlled in forest compartments, **no more than 3 ℓ/ha should be applied**.
- Do not apply this product in combination or tank mixture with any other product or agricultural remedy which is not specifically listed on this label. Agritech Bioscience (Pty) Ltd t/a Carabiner accepts no responsibility for any negative effects experienced if the instructions on this label are not adhered to, unless a Carabiner representative was consulted beforehand.
- By buying this product, the buyer undertakes that the user is fully aware of and suitably trained on the hazards associated with the preparation and use of this product. By selecting this product

voluntarily, the user assumes responsibility for his or her own personal protection whilst storing, mixing, and applying the product in the approved manner according to the instructions for use. The user also confirms to have consulted the SDS of this product and he/she is aware of the potential health hazards which could arise out of use and misuse of this product. Users are encouraged to keep records of all procedures followed and which personal protection equipment was used at all times. All personal protection equipment used must be kept clean and in good working order according to the manufacturer's specifications. Agritech Bioscience (Pty) Ltd t/a Carabiner accepts no responsibility for any adverse effects experienced if the instructions on this label are not adhered or resulting from improper use of this product or the use of unsuitable personal protection equipment. The user has selected to use this product at his/her own free will and risk.

- **Do not use SAHARA if the above-mentioned use restrictions cannot be adhered to.**

MIXING INSTRUCTIONS

Half-fill the spray tank with suitable water. Shake the container of **SAHARA** well prior to measuring the required quantity of **SAHARA**. Add this mixture to the tank while agitating. If a complementary product is to be used in conjunction with **SAHARA**, this should be pre-mixed in the same way. Fill the spray tank to the required volume with suitable water while maintaining agitation. Do not use brackish water. Should tank mixtures with other products be made, follow the respective manufacturer's label recommendations. Ensure continuous agitation throughout the application process.

Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank overnight. Spraying equipment must be thoroughly flushed out at the end of the spraying operation as described above.

GENERAL INFORMATION

- **SAHARA** is a systemic herbicide with limited variation in selectivity. *Eucalyptus* species are especially susceptible, therefore it can be used for eradication and stump control of such species in most scenarios. Invader plants may also be controlled by **SAHARA** in forestry conservation areas, industrial stands and grazing areas.
- The product is readily absorbed through foliage, roots and freshly cut sapwood regions, and then rapidly translocated to the meristematic tissues.
- The optimal effect of **SAHARA** is achieved by applying it onto cut stumps where it gets into contact with the growing tissues from where it is translocated to other meristematic areas of the plant. This is more effective than foliar applications. The cut stump application method requires minimal amount of product and therefore minimizes environmental exposure.
- Although **SAHARA** appears to be slow acting, growth is halted soon after application, and the response to the herbicide is especially rapid under ideal growing conditions.
- When the target plants are under dormant or stressed conditions, slower action can be expected. Deformed leaf and shoot growth may appear under certain conditions, but further treatment will only be necessary if normal re-growth occurs afterwards.
- Optimal control of woody species will be achieved when the stems are cut close to the ground before **SAHARA** is applied onto the clean, cut surface areas. Only treat freshly cut surfaces. Branches or multi-stem plants should be treated as individual plants.
- Alternatively, expose the sapwood by means of frilling right around the stem before applying the recommended dosage of **SAHARA**.
- Cut stems and frills must be performed as close to the ground as possible and must be free of any obstructions.

APPLICATION INSTRUCTIONS

Ensure that the equipment is correctly calibrated and is checked regularly during application to ensure even and accurate application. Knapsack sprayers, tractor mounted boom sprayers or similar suitable applicators which are fitted with solid cone nozzles and can distribute the spray mixture evenly over the target may be used. A spray volume of at least 300 l/ha should be used to ensure thorough coverage of target plants. Use nozzles such TG1 or equivalent to ensure good coverage. **Constant agitation throughout the spray operation is essential.** Only clean water should be used. Do not, under any circumstances allow spray or drift to contact any part of desirable vegetation otherwise severe injury or destruction may result.

FOLIAR APPLICATION

- Apply to actively growing plants with full leaf cover.
- Do not spray whilst weeds are wet, dormant, under stress or covered in a layer of dust or silt or when damaged by frost.
- Rain on sprayed plants may result in reduced efficacy if occurring within 1 hour of application or before spray deposit has dried.
- Apply as full cover spray
- Always thoroughly wet all leaves and stems.

CUT STUMP APPLICATION

- Apply within 4 hours of cutting.
- **SAHARA** should not be applied to cut stump surfaces which are wet with dew or rain or covered in sawdust or soil.
- Apply with solid cone nozzle at no more than 1 bar pressure.
- Apply to the cambium region of the cut surface as well as to the stem sides and exposed root surfaces.

APPLICATION RATES

TABLE 1: GENERAL WEED CONTROL: CUT STUMP TREATMENT OF INVADER PLANTS IN FORESTRY, GRAZING, INDUSTRIAL AND CONSERVATION AREAS

SPECIES	DOSAGE RATE/10 º WATER	REMARKS
Bugweed (<i>Solanum mauritianum</i>)	80 m¸	These weeds can best be controlled by cut stump treatments with SAHARA in grazing, industrial and conservation areas. In forestry the use should be restricted to pine and wattle plantations.
Guava (<i>Psidium guajava</i>)	520 m¸	
Ink berry (<i>Cestrum laevigatum</i>)	80 m¸	
Lantana (<i>Lantana camara</i>)	80 m¸	
Mopane (<i>Colophospermum mopane</i>)	200 m¸	
Saligna gum (<i>Eucalyptus grandis</i>)	200 m¸	
Syringa (<i>Melia azedarach</i>)	125 m¸	
Triffid weed (<i>Chromolaena odorata</i>)	80 m¸	

- Stems of weeds should be cut as close to the ground as possible and the **SAHARA** solution should be applied to the sapwood region before cut surfaces dry out. Cuts should be as horizontal as possible.
- The **SAHARA** solution should be applied using low pressure applicators, a dosing gun or, as a last resort, a knapsack sprayer.
- Do not use high pressure applicators. Solution may also be poured on.
- All applications should be made at the rate of 10 m¸ solution per 100 mm cut stem diameter.

TABLE 2: GENERAL WEED CONTROL: FOLIAR APPLICATION TO INVADER PLANTS IN GRAZING, INDUSTRIAL AND CONSERVATION AREAS

SPECIES	DOSAGE RATE/10 ℓ WATER	REMARKS
Common reed (<i>Phragmites australis</i>)	25 mℓ	Before flowering, apply as a full cover spray in a minimum of 800 ℓ water / ha. Apply before flowering. The addition of a registered glyphosate will increase knockdown, but a follow-up treatment may still be required during the next season. NOTE: Reeds growing in or near water that may possibly be used for irrigation, should not be treated with SAHARA.
Industrial weed control	Winter rainfall areas: 3-4 ℓ/ha Summer rainfall areas (inland): 4-6 ℓ/ha Summer rainfall areas (coastal): 6-8 ℓ/ha Summer rainfall areas (coal and ash): 6-8 ℓ/ha	Apply as a full cover spray onto target area. Depending on the overall density of the target weed population, use 300 – 600 ℓ spray water / ha. Use higher rates where common quick grass (<i>C. dactylon</i>) and hardy tufted perennial grasses are to be controlled. The lower rates are generally only suitable for control of annual weeds or where limited residual control is required. SAHARA controls yellow nutsedge, most grasses and herbaceous broadleaf weeds at 4 ℓ/ha.

A suitable non-ionic adjuvant may be added to the above recommendations.

Please refer to and read the **USE RESTRICTIONS, PRECAUTIONS**, and **DIRECTIONS FOR USE** carefully before mixing and applying **SAHARA**.

The registration holder does not accept any responsibility for unlisted weeds.