Read the label before opening the container. For full particulars, see enclosed leaflet.

KEEP OUT OF REACH OF CHILDREN AND ANIMALS

S-MOC 915

South Africa Reg. No: L11329 Act No. 36 of 1947

HRAC HERBICIDE GROUP CODE: K3

An emulsifiable concentrate herbicide with safener for pre-emergence control of annual grasses and also Yellow nutsedge under certain conditions in maize, dry beans as well as soybeans, in the summer rainfall region.

ACTIVE INGREDIENT:

S-metolachlor (chloro-acetanilide).....915g/ℓ

Product Information: 072 678 8226
In case of poisoning: 082 446 8946



HAZARD STATEMENTS

- May be harmful if swallowed or in contact with skin.
- Harmful if inhaled.
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye damage.
- Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

- Wear protective gloves/protective clothing/ eye protection/face protection.
- Avoid release to the environment.
- Collect spillage

Expiry Date:
Batch No:
Date of Manufacture:

enviro™ bio-chem

Registration holder: Enviro Bio-Chem (Pty) Ltd
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UN No. 3082

WARNINGS:

- May be harmful if swallowed or in contact with skin
- Harmful if inhaled
- Causes skin irritation
- May cause an allergic skin reaction.
- Causes serious eye damage.
- Very toxic to aquatic life with long lasting effects.
- Handle with care.
- Toxic to fish.
- Store in a cool place.
- Store away from food and feeds.
- Keep out of reach of children, uninformed persons and animals.
- **Re-entry:** Do not enter treated area within 1 day after treatment unless wearing protective clothing.
- **In case of poisoning call a doctor and show this label to him/her.**

Aerial application:
Notify all inhabitants in the immediate vicinity of the area to be sprayed and issue the necessary warnings. Do not spray over or allow the drift to contaminate water or adjacent areas.

Although this herbicide has been extensively 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 effected 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 pest against the remedy concerned as well as by the method, time and accuracy of the 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 herbicide concerned due to failure of the user to follow the label instructions or to the occurrence of conditions that could not have been foreseen in terms of the registration. Consult the supplier in event of any uncertainty.

PRECAUTIONS:

- Keep out of reach of children.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing should not be allowed out of the workplace.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- IF ON SKIN: Wash with plenty of water.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF exposed or concerned: Get medical advice/attention.
- Call a POISON CENTRE or doctor if you feel unwell.
- If skin irritation or rash occurs: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.
- Collect spillage.
- Store locked up.
- Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
- Do not inhale fumes or the spray mist.

- Avoid contact with remedy with skin.
- Wash with soap and water after handling and application or after accidental contact with the skin.
- Wash contaminated clothing after use.
- Do not eat, drink or smoke while mixing or applying the product or before washing hands and face.
- Avoid drift of spray onto other crops, grazing, rivers, dams, boreholes and areas not under treatment.
- Thoroughly clean spraying equipment directly after use and dispose of wash water where it will not contaminate food, grazing, boreholes, rivers or dams.
- **TRIPLE RINSE** empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow draining 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 rinsing to the contents of the spray tank before destroying the container in the prescribed manner.
- Destroy the empty container by perforation and flattening and dispose of it in a safe way.
- **Never** re-use the empty container for any other purpose.
- Prevent contamination of food, feed, drinking water and eating utensils.

SYMPTOMS OF HUMAN POISONING:

No case of human poisoning is known. Under laboratory conditions the poisoning symptoms were: sedation, dyspnoea, exophthalmus, curved posture and ruffled fur.

RELEVANT SUBSTANCES:

S-MOC 915 contains:
S-metolachlor (84.91)%
Light aromatic solvent (2.5-10)%
Phenyl sulphonate salt (3.02)%
Benoxacor (2.5-10)%

FIRST AID:

If poisoning is suspected take the patient immediately to the nearest physician and show him this label.
Remove the patient from the source of poisoning to a well-ventilated area and keep him calm and assured.

INGESTION: If the product was ingested, do not induce vomiting. Administer medicinal charcoal repeatedly with plenty of water. Never give anything by mouth to an unconscious person. If the substance has been swallowed promptly administer a large quantity of milk, egg whites, gelatine solution or, if these are not available large quantities of water. Do not induce vomiting or give anything by mouth to an unconscious person.
SKIN CONTACT: Remove contaminated clothing and rinse contaminated body areas with soap and water. Do not rub the skin.
INHALATION: Remove person to fresh air and keep comfortable for breathing.
EYE CONTACT: Rinse contaminated eyes with running water for at least 15 minutes.

NOTE TO PHYSICIAN

No specific antidote is known. If ingested, induce emesis or lavage stomach. Administration of aqueous slurry of activated charcoal may be considered. Treat symptomatically.

RESISTANCE WARNING:

S-MOC 915 is a **group code K3** herbicide. Any weed population may contain individuals naturally resistant to **S-MOC 915** and other **group code K3** herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programs. **S-MOC 915** or any other **group code K3** herbicides may not control these resistant weeds.

To delay herbicide resistance:

- avoid exclusive repeated use of herbicides from the same herbicide group code. Alternate or tank mix with products from different herbicide group codes,

- integrate other control methods (chemical, cultural, biological) into weed control programs. For specific information on resistance management contact the registration holder of this product.

USE RESTRICTIONS:

S-MOC 915 may damage maize and sweet corn.

- Do not use **S-MOC 915** on inbred parent lines of maize hybrids or experimental or newly released cultivars without first consulting your supplier or the seed company concerned.
- Do not use **S-MOC 915** on poorly drained soils or soils with a compaction layer as under these conditions water logging can occur and the herbicide may cause crop injury.
- Do not apply **S-MOC 915** to sandy soils that are susceptible to wind erosion.
- Flood irrigation can reduce weed control performance.

Restrictions in Dry beans:

- **S-MOC 915** may damage dry beans in hot, dry conditions especially in the presence of a compaction layer in the soil. Under these conditions beans might also be susceptible to wind damage.
- **S-MOC 915** may damage dry beans on waterlogged, shallow, sandy soils of <100cm depth with an impermeable clay sub soil.
- **S-MOC 915** may damage dry beans on fields with a high incidence of soil borne diseases and/or where monoculture is practised.

IMPORTANT:

- Where other herbicides are used in combination with **S-MOC 915** the use restrictions as given on the labels of the herbicides concerned, must be adhered to.

WEEDS CONTROLLED: The following weed species are normally controlled by a pre-emergence application of **S-MOC 915** at the dosage rates indicated in this label:	
Sweet Signal Grass	*Brachiaria Eruciformis*
Feathertop Chloris	*Chloris Virgata*
Nettle-leaved goose foot	*Chenopodium murale*
Crowfoot	*Dactyloctenium aegyptium*
Crab finger-grass	*Digitaria sanguinalis*
Barnyard grass	*Echinochloa crusgalli*
African goosegrass	*Eleusine coracana subsp. africana*
Sweet buffalo grass	*Panicum schinzii*
Common buffalo grass	*Panicum maximum*
False signal grass	*Pseudobrachiaria deflexa*
Red bristle grass	*Setaria pallide-fusca*
Sticky bristle grass	*Setaria verticillata*
Small carrotseed grass	*Tragus berteronianus*
Large carrot seed grass	*Tragus racemosus*
Bushveld herringbone grass	*Urochloa mosambicensis*
Herringbone grass	*Urochloa panicoides*
Mexican richardia	*Richardia brasiliensis*
Control of the following weeds is variable:	
Cape pigweed	*Amaranthus hybridus*
Thorny pigweed	*Amaranthus spinosus*
Red pigweed	*Amaranthus thunbergii*

Control of the following weeds is variable:	
Green goosefoot	*Chenopodium carinatum*
Spindle pod	*Cleome monophylla*
Bengal wandering Jew	*Commelina benghalensis*
Yellow nutsedge	*Cyperus esculentus*
Large thorn apple	*Datura ferox*
Thorn apple	*Datura stramonium*
Gallant soldier	*Galinsoga parviflora*
Apple of Peru	*Nicandra physaloides*
Purslane	*Portulaca oleracea*
Dwarf Marigold	*Schkuhria pinnata*

IMPORTANT:

Yellow nutsedge *(Cyperus esculentus)*

The control of *C. esculentus* can be improved provided the following conditions are met:

1. Thorough ploughing with a mouldboard plough should immediately precede planting.
2. A relatively fine, even and firm seedbed is prepared.
3. Herbicide application is followed by at least 10 to 20mm of soft penetrating rain (or irrigation) to leach the herbicide into the soil prior to the emergence of *C. esculentus* (normally 7 to10 days after ploughing). These conditions are more likely to occur during the latter half of the planting season (November). More rain is required on heavier soils to obtain good results. This is the reason for the very poor control sometimes obtained on turf soils.
4. Rainfall following herbicide application but before emergence of C. esculentus is necessary for optimum *C. esculentus* control. For this reason application of **S-MOC 915** should be performed at or immediately after planting into moist soil.
5. When planting into dry soil (insufficient moisture for C. esculentus germination) application of **S-MOC 915** should be timed as close as possible to, but definitely before the first rains.

DIRECTIONS FOR USE: Use only as directed. Compatibility:

The compatibility of **S-MOC 915** with other products may be influenced by the formulation of the products involved as well as the quality of the water. Since the formulation of other products may change without the knowledge of Enviro Bio-Chem (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:

Replace cap after use.

Half-fill the spray tank with water, then pour the required amount of **S-MOC 915** into the spray tank, while the water is being stirred. Top up with water to the final volume required.

Application Techniques:

Post plant pre-emergence:

When planting into moist soil, **S-MOC 915** must be applied within three days of planting (but preferably at planting) on a fine, even, firm and freshly prepared weed free seedbed.

- To obtain good results it is necessary that rain or irrigation follows application, before the weeds emerge.
- If rainfall does not occur in time and weeds begin to emerge and develop, a shallow cultivation must be carried out to destroy these weeds and to mix the herbicide with the top 10 to 20mm of soil.
- When planting into dry soil (insufficient moisture for germination), **S-MOC 915** must be applied as close to, but definitely before the first rain. Emerged weeds at the time of application will NOT be controlled.

Pre-plant incorporated (maize only):

- In order to obtain more reliable control of C. esculentus, **S-MOC 915** can be shallowly incorporated into the soil prior to planting. This

incorporation may be done with a Kongskilde Triple K, a Fieldspan cultivator or similar implement. A roller should in each case be fitted to the rear of the implement.

- The working depth of the implement should be 75 to100mm in order to ensure effective incorporation into the top 37 to 50mm of soil.
- To further ensure proper mixing of the **S-MOC 915** with the soil, incorporation should be done at a speed of 9 to 11km per hour.
- Proper primary seedbed preparation should precede the incorporation of **S-MOC 915**.
- The incorporation of **S-MOC 915** in the latter part of the season is not recommended, since pre-emergence applications usually give satisfactory control.
- Although the incorporation of **S-MOC 915** may result in more reliable control of C. esculentus during the drier first half of the planting season, some rain is still required to moisten the top soil to allow the **S-MOC 915** to be absorbed by the weeds. However, less rain is required than after a pre-emergence application after planting.

Post-emergence (maize, sweet corn):

- **S-MOC 915** has very limited post-emergence effect. It may however be applied post- emergence to the crop immediately after cultivation i.e. when no weeds are present.
- Weeds that are present after the cultivation will not be controlled.

Ground application:

- **S-MOC 915** may be applied with any medium or high volume sprayer, properly calibrated, and which is equipped with an efficient agitation mechanism.
- All spray applications must be made with suitable spraying equipment in good working order and correctly calibrated to deliver the desired coverage of the target area for the recommended method of application.
- Apply in at least 200ℓ water / ha to ensure an even distribution and good recovery of the prepared spray mixture onto the target area.

Aerial application:

Aerial application of this product may only be done by a registered aerial application operator using a correctly calibrated, registered aircraft according to the instructions of SANS Code 10118 (Aerial Application of Agricultural Remedies). It is important to ensure that the spray mixture is distributed evenly over the target area and that the loss of spray material during application is restricted to a minimum. It is therefore essential that the following criteria be met:

- Volume: A minimum volume of 30 litres per hectare is recommended. As this product has not been evaluated at a reduced volume rate, the registration holder cannot guarantee efficacy or be held responsible for any adverse effects if the product is applied aerially at a lower volume rate than recommended above.
- Droplet coverage: Droplet coverage of 30 to 40 droplets per cm^2 must be recovered at the target.
- Droplet size: A droplet spectrum with a VMD of 250 to 280 micron is recommended. Ensure that the production of fine droplets (less than 150 micron - high drift & evaporation potential) is restricted to a minimum.
- Flying height: The height of the spray boom should be maintained at 3 to 4 metres above the target. Do not spray when aircraft is in a climb, at the top or during a dive, or when banking.
- Equipment: Use suitable atomising equipment (hydraulic nozzles or rotary atomisers) that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product either through endodrift (within target field) or exodrift (outside target field). The operator must use a setup that will produce a droplet spectrum with the lowest possible relative span. All nozzles / atomisers should be positioned within the inner 60 % to 75 % of the wingspan to prevent droplets from entering the wingtip vortices.
- Meteorological conditions: The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 8°C. The addition of a suitable anti-evaporant is recommended if the VMD of the droplets is less than 200 to 250 micron.
- Stop spraying if the wind speed exceeds 15 km per hour.
- Aerial application of this product must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdraughts occur. Also note that the application of this product under temperature inversion conditions (spraying in or above the inversion layer) may lead to the following:
  a) reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage),
  b) damage to other sensitive crops and or non-target areas through the movement of the suspended spray cloud away from the target field.

To achieve this, it is essential that the following requirements be met:

a) Use a conventional boom. Nozzles must be equipped with flat fan tips e.g. SS 6515 or similar.
b) Maintain a flying height of three metres above the target area at wind speeds of 0 to 8 km per hour and a flying height of two metres at wind speeds of 8 to 15km per hour. Do not spray when the wind speed exceeds 15 km per hour.
c) The difference between the wet and dry bulb reading, as determined with a swing hygrometer, must not exceed 8 º C.
d) Do not spray during the heat of the day.
e) Ensure that fields are accurately marked.

Pre-emergence application:

- A minimum spray volume of 30 litres per hectare.
- A minimum of 20 to 30 droplets per square centimetre must be recovered on the target area.
- Employ a droplet spectrum with a VMD of 350 to 400 micron.

IT IS ESSENTIAL TO OBTAIN AN ASSURANCE FROM THE AERIAL SPRAY OPERATOR THAT THE ABOVE REQUIREMENTS ARE MET.

Centre pivot irrigation application:

- S-MOC 915 may be applied in irrigation water pre-emergence (after planting but before weeds or crop emerge) at rates recommended on this label.
- Use only centre pivot systems that apply water uniformly. Prepare a mixture with a minimum of one part of water to one part herbicide and inject this mixture into the centre pivot system using a positive displacement pump.
- Injecting a larger volume of a more dilute mixture per hour will usually provide more accurate calibration of metering equipment.
- Maintain sufficient agitation to keep the herbicide in suspension.
- Apply in 12.5 to 25mm of water.
- Use the lower water volume (12.5mm) on coarser textured soils and the higher volume (25 mm) on finer textured soils. More than 25 mm of water at application may reduce weed control by moving the herbicide below the effective zone in the soil.

Precautions for centre pivot applications:

- Apply only through irrigation systems containing anti-siphon and check valves to prevent contamination of the well during shutdown and overflow of solution tank.
- Inject ahead of any right angle turn in the main line, to insure adequate mixing.
- Chemical injection pumps and water pumps must have interlocking controls to insure simultaneous shut- off.
- Application when drift may occur, such as from windy conditions, or when system joints and connections are leaking, or when nozzles are not providing uniform distribution, may cause crop injury.
- Where sprinkler distribution patterns do not overlap sufficiently this may result in poor weed control.
- Where sprinkler distribution patterns overlap excessively, crop injury or unacceptable residues may result.

RECOMMENDATIONS AND APPLICATION RATES

A. MAIZE AND SWEETCORN

- S-MOC 915 may be applied immediately following planting but pre-emergence with respect to maize, sweetcorn and weeds or it may be shallowly incorporated into the soil just prior to planting. It may also be applied post-emergence after cultivation.
- Where Yellow nutsedge *(C. esculentus)* constitutes an important part of the weed population and planting commences during the first half of the planting season (prior to 20 October), it is recommended that a shallow incorporation of S-MOC 915 be carried out.
- Where Yellow nutsedge is not a problem or where planting only commences during the second half of the planting season (after 20 October) the incorporation of S-MOC 915 is not recommended.
- Since S-MOC 915 inadequately controls broadleaf weeds, the use of a broadleaf herbicide in combination with S-MOC 915 is recommended. The broadleaf herbicide may be applied pre- or post-emergence. As post-emergence treatments afford more effective and also more reliable control of especially deep germinating broadleaf weeds such as *Datura spp., Xanthium spp., Tribulus terrestris, C. benghalensis and Cucumis myriocarpus* post-emergence treatments are preferred. The different treatment combinations, which may be used, are indicated in the following tables.

Table 1.

S-MOC 915 applied pre-emergence or pre-plant incorporated

SOIL TYPE	% CLAY	S-MOC 915 (ℓ/ha)
Sand / Loamy sand / sandy loam	0 to 20	0.7 to 0.9
Sandy clay loam	21 t 30	0.8 to 1.0
Sandy clay loam / sandy clay	31 to 40	0.95 to 1.1
Sandy clay / Turf	41 to 50	0.95 to 1.3

COMMENTS TABLE 1

IMPORTANT NOTE

- **DO NOT** use COMBO-ZINE SC as follow-up application or in combination with **S-MOC 915** on **Sweetcorn**. Use only the recommendations in Table 1 for **sweetcorn.**
- Use the higher application rates of **S-MOC 915** for improved control of *C. esculentus* (**Yellow nutsedge**).
- Use the higher application rates of **S-MOC 915** where heavy infestations of *D. sanguinalis* (**Crab finger- grass**) exist.
- Use the higher application rates of **S-MOC 915** for good control of *B. eruciformis* (**Sweet signal grass**).
- Use the higher application rates when **S-MOC 915** is pre-plant incorporated.
- Use the higher application rates of **S-MOC 915** where organic matter in the soil exceeds 1%.
- On soils containing more than 30% clay broadleaf weeds may not be controlled satisfactorily pre-emergence and preference should be given to post-emergence control of broadleaf weeds.
- Grasskillers belonging to the chloroacetamide group of herbicides (that includes **S-MOC 915**) are absorbed via the coleoptile of grass weeds. Therefore, for good grass control the herbicide needs to be present at lethal concentrations in the top ± 50 mm of the soil profile. The adsorptive capacity of a soil for these herbicides, as well as the amount of water that moves through the soil profile with rain/irrigation, determine the resultant concentration of these herbicides in the top layers of the soil profile. As a result of the low adsorption capacity of sandy soils (0 to 15% clay, <1% organic matter) the amount of these herbicides can be reduced to sub-lethal concentrations in the top ± 50 mm after the occurrence of permeating rain (25 mm and more within one day). Persistent rain (50 mm and more distributed over 3 to 7 days) will have the same result. It can therefore happen that grasses germinate if such conditions prevail.

IMPORTANT

- PERFOMER must be added to this post-emergence spray mixture.

STALE SEEDBED / MINIMUM TILLAGE / STUBBLE MULCH (Maize, sweet corn)

- Where minimum tillage or stubble mulch is practised, weeds may have emerged at the time of planting.
- If crops are planted under such conditions or into a stale seedbed, where grass weeds have already emerged and/or the broadleaf weeds have developed beyond the seedling stage, it is recommended that PARAQUAT 200 SL be added to **S-MOC 915** according to the recommendations of the manufacturer. The PARAQUAT 200 SL will destroy the emerged weeds and create a pre-emergence situation for the **S-MOC 915** to act.
- When PARAQUAT 200 SL is added, spraying should be carried out prior to emergence of the crop, as PARAQUAT 200 SL will damage the crop if it is applied post-emergence.
- In the case of minimum tillage or stubble mulch the density of the stubble and humus may affect the efficacy of **S-MOC 915**. Therefore consult a representative of Enviro Bio-Chem (Pty) Ltd or your distributor.

IMPORTANT

All dosage rates given above apply to full cover sprays. In the case of band treatment over the rows the corresponding amount of herbicide should be calculated in accordance with the band and row widths. Ensure that the crop is properly fertilised to ensure vigorous seedling growth.

B. DRY BEANS AND SOYBEANS

Table 2. The following **S-MOC 915** application rates are recommended for the different crops on various soil types and for the control of certain weeds.

SOIL TYPE	% CLAY	S-MOC 915 (ℓ/ha)
Sand / Loamy sand / sandy loam	0 to 20	0.6 to 0.8
Sandy clay loam	21 t 30	0.8 to 1.0
Sandy clay loam / sandy clay	>30	1.3 to 1.1

Use the higher application rate of **S-MOC 915** for improved control of Yellow nutsedge *(C. esculentus)* or where heavy infestations of Crab finger-grass *(D. sanguinalis)* exist or where the organic matter in the soil exceeds 1% carbon.