BEFORE USING THIS PRODUCT READ ENTIRE LABEL CAREFULLY

Pennant Magnum®

Herbicide

syngenta®

Reg. No. **L9320** Act / Wet No. 36 of / van 1947

ONKRUIDDODERGROEP	K3	HERBICIDE GROUP

Aktiewe bestanddeel / Active ingredient:
S-metolachlor (chloorasetanilied) /
S-metolachlor (chloro-acetanilide)..... **960 g/ℓ**

UN 3082

'n Emulgeerbare konsentraat onkruiddoder vir vooropkombeheer van eenjarige grasse en onder sekere omstandighede ook geeluintjies in gras kwekerye, grasperke en gras aanplantings.

An emulsifiable concentrate herbicide for pre-emergence control of annual grasses and under certain conditions yellow nut sedge in turf nurseries, lawns and grass landscape plantings.

Batch No **Date of Manufacture**

EMERGENCY TEL. / NOOD TEL.
++27 (0) 8312 33 911
(Bateleur 911)

Registration holder / Registrasiehouer:
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(Co./Mpy Reg. No. 1998/013761/07)
Private Bag / Privaatsak X 60
HALFWAY HOUSE, 1685 RSA.
Tel. (011) 541-4000

1. WARNINGS

- Handle with care.
- Poisonous if swallowed.
- Toxic to fish.
- Store in a cool place.
- Store away from food and feed.
- Keep out of reach of children, uninformed persons and animals.
- **In case of poisoning call a doctor and make this label available to him.**
- **Re-entry:** Do not enter treated area within 1 day after application unless wearing protective clothing.
- **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 drift to contaminate water or adjacent areas.

Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be effective under all conditions. The activity and effect 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 weed 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 man or animal, 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.

2. PRECAUTIONS

- Do not inhale the spray mist.
- Avoid skin contact.
- Wash with soap and water after use.
- 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 and areas not under treatment.
- Clean applicator after use. Dispose of rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Rinse the empty container three times with a volume of clean water equal to a minimum of 10 % of the container. Add the rinsate to the content of the spray tank.
- Do not use the empty container for any other purpose.

SYMPTOMS OF HUMAN POISONING

No case of human poisoning is on record.

FIRST AID TREATMENT

If poisoning is suspected immediately call a physician. Remove patient from further contact with pesticide and place him in a well ventilated area. In case of eye contact hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. In case of skin contact, wash with plenty of soap and water. Consult a physician if irritation persists. 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.

NOTE TO PHYSICIAN

No specific antidote is known. If ingested, induce emesis or lavage stomach. Administration of an aqueous slurry of activated charcoal may be considered. Apply symptomatic therapy.

3. RESISTANCE MANAGEMENT

PENNANT MAGNUM is a group code K3 herbicide. Any weed population may contain individuals naturally resistant to **PENNANT MAGNUM** 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. These resistant weeds may not be controlled by **PENNANT MAGNUM** or any other group code K3 herbicides.

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.

4. USE RESTRICTIONS

DO NOT USE IN GREENHOUSES OR OTHER ENCLOSED STRUCTURES.

Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas.

To prevent off-site movement due to runoff or wind erosion:

1. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
2. Do not apply to impervious substrates such as paved or highly compacted surfaces.
3. Do not use tail water from the first flood or furrow irrigation of

treated fields to treat non-target crops unless at least 12 mm of rainfall has occurred between application and the first irrigation.

PENNANT MAGNUM controls many annual grasses, certain annual broadleaf weeds, and yellow nutsedge.

PENNANT MAGNUM may be used on commercial and residential warm-season turf grasses and other no crop land, including, but not limited to the following: airports, roadsides, golf courses, sports fields, public recreational areas, ornamental gardens, cemeteries, other landscaped areas, etc. **PENNANT MAGNUM** may also be used in and around container and field-grown ornamentals, nonbearing nursery stock, and on sod farms.

5. WEEDS CONTROLLED

The following weed species are normally controlled by a pre-emergence application of **PENNANT MAGNUM** at the dosage rates as indicated below:

Botanical Name	Local English name
Brachiaria eruciformis	**sweet signal grass**
Chloris virgata	**feathertop Chloris**
Dactyloctenium aegyptium	**crowfoot**
Digitaria sanguinalis	**crab finger-grass**
Echinochloa crusgalli	**barnyard grass**
Eleusine indica	**goose grass**
Panicum maximum	**common buffalo grass**
Panicum schinzii	**sweet buffalo grass**
Pseudobrachiaria deflexa	**false signal grass**
Setaria pallide-fusca	**red bristle grass**
Setaria verticillata	**sticky bristle grass**
Tragus berteronianus	**small carrotseed grass**
Tragus racemosus	**large carrotseed grass**
Urochloa mosambicensis	**bushveld herringbone grass**
Urochloa panicoides	**herringbone grass**
Control of the following weeds is variable	
Amaranthus hybridus	**common pigweed**
Amaranthus spinosus	**thorny pigweed**
Amaranthus thunbergii	**red pigweed**
Chenopodium carinatum	**green goosefoot**
Cleome monophylla	**spindlepod**
Commelina benghalensis	**Bengal wandering Jew**
Cyperus esculentus	**yellow nut sedge**
Datura ferox	**large thorn apple**
Datura stramonium	**thorn apple**
Galinsoga parviflora	**gallant soldier**
Nicandra physaloides	**Apple of Peru**
Portulaca oleracea	**purslane**

Important

Yellow nut sedge *(Cyperus esculentus)*

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

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

Grass control

- Grass killers belonging to the chloroacetamide group of herbicides (that includes **PENNANT**) are absorbed via the coleoptiles 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 - 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 - 7 days) will have the same result. It can therefore happen that grasses germinate if such conditions prevail. Split applications is recommended if **PENNANT MAGNUM** is used on such soils. Permeating and / or persistent rain after the split application will have the same result.

6. DIRECTIONS FOR USE

Use only as directed

6.1 COMPATIBILITY

The compatibility of **PENNANT MAGNUM** 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 Syngenta and the quality of water may vary from farm to farm, a physical compatibility test should always be carried out prior to application.

6.2 MIXING INSTRUCTIONS

Replace cap after use

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

Ensure thorough agitation of the mixture in the tank during mixing and spraying.

Tank mixtures must be sprayed out immediately and not allowed to stand in the spray tank.

6.3 APPLICATION TECHNIQUES

6.3.1 Ground Application:

PENNANT MAGNUM may be applied with any medium or high volume sprayer properly calibrated and which is equipped with an efficient agitation mechanism. Choice and arrangement of fan-type spray nozzles should be such as to ensure even distribution and optimal recovery of the herbicide

Apply **PENNANT MAGNUM** alone or in tank mixtures by ground equipment in a minimum of 100 liter of spray mixture per hectare, unless otherwise specified.

Use sprayers that provide accurate and uniform application. For **PENNANT MAGNUM** tank mixtures with wettable powder or dry flowable formulations, screens and strainers should be no finer than 50-mesh. Rinse sprayer thoroughly with clean water immediately after use.

Pre-emergence:

When planting into moist soil, **PENNANT MAGNUM** 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 application is followed by rain or irrigation 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 - 20 mm of soil.

When planting into dry soil (insufficient moisture for germination), **PENNANT MAGNUM** must be applied as close to, but definitely before the first rain. Emerged weeds at the time of application will not be controlled.

Post-emergence:

PENNANT MAGNUM has very limited post-emergence effect.

6.3.2 Aerial application (Pre- and post-emergence) (Sod Farms Only)

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 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 are met:

a) Application parameters:
- **Volume:** A volume of 30 ℓ/ha (pre-emergence) and 35 ℓ/ha (post emergence) 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:** A droplet coverage of 20 - 30 droplets/cm² (pre-emergence) and 30 - 45 droplets/cm² (post emergence) must be recovered at the target.
- **Droplet size:** A droplet spectrum with a VMD of 350 - 400 microns (pre-emergence) and 300 - 350 (post emergence) is recommended. Ensure that the production of fine droplets (less than 150 microns - high drift & evaporation potential) is restricted to a minimum.
- **Flying height:** The height of the spray boom should be maintained at 3 - 4 metres above the target. Do not spray when aircraft is in a climb, at the top or during a dive, or when banking.

b) 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.

c) 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 - 250 microns.
- Stop spraying if the wind speed exceeds 15 km/h or reduces to less than 5 km/h.
- 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:
- reduced efficacy due to suspension and evaporation of small droplets in the air (inadequate coverage)
- damage to other sensitive crops and or non-target areas through the movement of the suspended spray cloud away from the target field.

It is essential to obtain an assurance from the aerial spray operator that the above requirements are met.

6.3.3 Centre pivot irrigation application

PENNANT MAGNUM 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 - 25 mm of water. Use the lower water volume (12.5 mm) 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 systems 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, unacceptable weed control may result. Where sprinkler distribution patterns overlap excessively, crop injury or unacceptable residues may result.

6.4 APPLICATION RATES

Nurseries and Landscape Plantings

Apply **PENNANT MAGNUM** at rates indicated below to control many annual grasses, certain broadleaf weeds, and yellow nutsedge.

Calibrate applicator equipment before use according to the manufacturer's directions.

Apply **PENNANT MAGNUM** before weeds emerge. Since soil moisture is necessary to activate **PENNANT MAGNUM**, irrigate with 12 mm of water if rainfall does not occur within 7 days after treatment.

Apply 1 - 1.3 ℓ/ha **PENNANT MAGNUM** on all soil types as a pre-emergence treatment. The higher rate is recommended on soils with more than 30% clay and on all soil types where *P. maximum* is a problem and/or for improved control of *C. esculentus* and/or for longer residual control on higher organic matter soils.

PENNANT MAGNUM can be applied at 1.3 ℓ/ha pre-emergence in turf grass (Kikuyu) and *Cynodon dactylon* e.g. golf course to control grasses as mentioned.

Soil type	% Clay	PENNANT MAGNUM (/ha)	PENNANT MAGNUM (/100 m²)
Sand / Loamy sand / sandy loam / Sandy clay loam	0 - 30	1.0ℓ	10 mℓ
Sandy clay loam / Sandy clay	>30	1,3ℓ	13mℓ

In soils highly enriched with organic matter (i.e., organic compost, sawdust, thatch) the activity of **PENNANT MAGNUM** may be reduced.

When **PENNANT MAGNUM** is applied broadcast over-the-top of plant foliage, follow with sufficient overhead irrigation to wash **PENNANT MAGNUM** from the foliage to reduce the chance of injury.

PENNANT MAGNUM can only be applied in established lawns.

Delayed spring green-up, temporary slowing of growth and yellowing may occur following application.

To avoid turf injury

i. the application of a nitrogen-containing fertilizer at or soon after applying **PENNANT MAGNUM** will minimize delay in spring green-up and any temporary yellowing;
ii. use **PENNANT MAGNUM** only on turf grass not under stress from infestations of insects, nematodes, or diseases;
iii. do not use on golf greens, tees, or aprons;
iv. do not seed or overseed with desirable turf grass within 4 months before or after treatment with **PENNANT MAGNUM**, and
v. do not apply this product to newly seeded grasses until they have overwintered and have a well-developed rhizome system.

Restrictions: To avoid possible illegal residues, do not graze or feed turf clippings to animals.

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