

AUTHORITY® 480 SC



REGISTRATION NUMBER L7872, ACT 36 of 1947

A suspension concentrate herbicide for the control of sedges, broadleaf weeds and annual grasses as indicated in plant and ratoon sugarcane and flue cured tobacco.

'n Suspensie konsentraat onkruidodder vir die beheer van uittjies, breë-blaaronkruid en eenjarige grasse soos aangedui in plant- en opvolg suikerriet en oondgedroogde tabak.

HERBICIDE GROUP CODE	E	ONKRUIDODDERGROEPKODE
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Active ingredient:

Sulfentrazone (aryl-triazolinone): 480 g/l Sulfentrasoon (ariel-triasolinoon)

Aktiewe bestanddeel

Contents: 1 l Inhoud

**REGISTERED BY /
GEREGISTREER DEUR:**

FMC Chemicals (Pty) Ltd
Co. Reg. No.: 1988/001451/07
P O Box / Posbus 44
Postnet Menlyn
Waterkloof Glen
0181

**For any emergency or poisoning
contact:
Griffon Poison Information Centre
(24 hrs)
+27-(0)-82-446-8946**

UN No. / VN Nr. 3082

BATCH NUMBER
DATE MANUFACTURED

LOTNOMMER
DATUM VERVAARDIG



DANGER
GEVAAR



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WARNINGS

- Handle with care
- Store in original container in a cool dry place away from foods and animal feeds.
- Keep out of reach of children, uninformed persons and animals
- May cause eye and skin irritation.
- Toxic to fish and other aquatic organisms.
- In case of poisoning call a medical doctor and show him/her this label
- Do not enter treated field within one day after application unless wearing protective clothing.

Although this remedy 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 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 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 the lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of the conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

SYMPTOMS OF HUMAN POISONING

Effects from overexposure result from inhaling this product. Symptoms of overexposure include convulsions, tremors, increased sensitivity to touch and sound, laboured breathing, decreased locomotion, tearing, nasal discharge and uncoordination.

FIRST AID TREATMENT

EYES: Flush with plenty of water. Get medical attention if irritation occurs and persists.

SKIN: Wash with plenty of soap and water. Get medical attention if irritation occurs and persists.

INGESTION: Rinse mouth with water. Dilute by giving 1 or 2 glasses of water. Do not induce vomiting. Never give anything by mouth to an unconscious person. See a medical doctor immediately.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTE TO PHYSICIAN

This product has low oral, dermal and inhalation toxicity. It is slightly irritating to the skin and non-irritating to the eyes. Contains toluene which can produce a severe pneumonitis if aspirated during vomiting. Consideration should be given to gastric lavage with an endotracheal tube in place. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

PRECAUTIONS

- Do not inhale spray mist
- Avoid contact with skin and eyes
- Wear suitable clothing and gloves when handling concentrate
- In case of accidental skin contact wash affected area with soap and water
- In case of accidental eye contact rinse eyes with plenty of water for at least 15 minutes. Get medical help if irritation persists.
- Wash contaminated clothing after use
- Do not eat, drink or smoke while mixing or applying product or before washing hands and face
- Avoid spray drift onto other crops, grazing, rivers, dams and other areas not under treatment
- Clean applicator after use, do not dispose of rinsate where it will contaminate crops, grazing or ground water.
- Prevent contamination of food, feed, drinking water and eating utensils
- Rinse empty container three times with a volume of clean water equal to a minimum of 10% of the container. Add the rinsing to the contents of the spray tank before destroying the container.
- Destroy empty container by perforation and do not use for any other purpose. Dispose of perforated container by burying or incineration in a suitable facility.

RESISTANCE MANAGEMENT

Authority® 480 SC is a group E (aryl-triazolinone) herbicide. Any weed population may contain individuals naturally resistant to **Authority® 480 SC** and other group E herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used repeatedly and exclusively in programmes. These resistant weeds may not be controlled by **Authority® 480** or any other group E herbicides.

To delay herbicide resistance:

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

ROTATIONAL CROP USE RESTRICTIONS

Allow the following waiting periods between the last application of **Authority® 480 SC** and the planting of follow-up crops.

Crop	Months	Crop	Months
Barley/wheat	5	Cotton, Sweetcorn	18
Maize, Sorghum, Rice	10	Sugarcane, Soyabean & tobacco	0
Other cereals, dry beans and groundnuts	12		

DIRECTIONS FOR USE: USE ONLY AS DIRECTED

MIXING INSTRUCTIONS

Fill spray tank with one half of the volume of clean water needed and start agitation. Prepare a slurry of **Authority® 480 SC** in a clean container using clean water. Slowly add the slurry of **Authority® 480 SC** to the spray tank. Carefully rinse the slurry container and add the rinsate to the spray tank then complete filling the spray tank to the required volume with clean water. Continuous spray tank agitation is required at all times to keep the product in suspension. Make sure **Authority® 480 SC** is thoroughly mixed prior to addition of surfactant and/or mixing partner. Use **Authority® 480 SC** immediately after mixing. Do not store the mixture for any length of time, e.g. overnight.

WATER QUALITY

Use only clean water with a pH<8

SPRAYER CLEANOUT

Drain the spray tank and spray system and completely flush with water plus ammonia. Then, remove all spray tips and strainers and clean separately in a bucket of clean water plus ammonia.

SPRAY DRIFT

Ensure that spray drift does not come into contact with surrounding crops, areas. Avoid fine droplet size, use low pressure flat fan nozzles or equivalent anti-drift types and do not exceed a spray pressure of 200kPa and a ground speed of 10kph. Nozzles should not be more than 50cm above the target. Do not apply if wind velocity exceeds 15kph.

MODE OF ACTION AND ACTIVATION

Following the application of **Authority® 480 SC** to soil as a pre-emergent herbicide to weeds and crop, targeted germinating seeds and seedlings take up sulfentrazone from the soil solution. The amount of sulfentrazone in soil solution, and available for weed up-take is determined primarily by soil type, organic matter and soil pH. Sulfentrazone adsorbs to clay and organic matter (OM) fractions of soils, effectively limiting the amount of active ingredient immediately available to control weeds.

Influence of soil type, organic matter and pH on AUTHORITY® 480SC field performance:

Soil pH exerts an effect on sulfentrazone availability in the soil solution. As soil pH increases, sulfentrazone availability increases. Irrigation with highly alkaline water (pH of 7.5 and above) following **Authority® 480 SC** soil application can also significantly increase the availability of the sulfentrazone in soil solution.

The total amount of sulfentrazone available in solution, in any given soil, is determined by the interaction of soil type (clay content), OM content and pH. The application rate and timing relative to the emergence of the crop and weeds, the amount of rainfall or irrigation received will ultimately determine, in conjunction with the soil parameters and pH, the amount of sulfentrazone in soil solution.

All applications of **Authority® 480 SC** require adequate moisture for herbicidal activation. **Authority® 480 SC** can await activating moisture for extended periods (10 to 14 days). Once activated, **Authority® 480 SC** will provide activity on existing weeds. The level of activity will depend on the weed species and their size at the time of activation.

SUGARCANE

PRE-EMERGENCE APPLICATION FOR CYPERUS ROTUNDUS CONTROL IN PLANT AND RATOON CANE

Where *C. rotundus* is a problem it is necessary to take specific measures to control and reduce the future infestation potential of this weed. Lands infested with *C. rotundus* are likely to have a dense and extensive system of rhizomes and nutlets which produce hardy plants over an extended period especially when there is good moisture available. More than one treatment is required to control *C. rotundus* in such situations and to significantly reduce the population of nutlets which have the potential to germinate in subsequent crops. In order to achieve maximum benefit control measures should be started in plant cane. Under such circumstances it is recommended that a programme of three sprays of **Authority® 480 SC** are applied in 200 to 400 l water/ha as a pre emergent spray, **the first at planting and then directly after the cane is cut in the following two cycles.**

PRE-EMERGENCE APPLICATION TO PLANT AND RATOON CANE AND TO WEEDS

Authority® 480 SC when applied as a pre-emergence herbicide to plant or ratoon cane provides residual control of germinating seeds and seedlings (Refer to the application rates table for the list of weeds controlled). **Authority® 480 SC** is absorbed by the roots and shoots of germinating seeds and seedlings and applications must be made before the weeds emerge on a clean cultivated surface. Sufficient rain or irrigation is required for **Authority® 480 SC** to be taken up by the roots and shoots of the germinating seeds and seedlings.

To increase the weed spectrum and residual control of pre-emergent applications, **Authority® 480 SC** may be tank mixed with ametryn, acetochlor, diuron or **Command 4 EC**. Refer to the relevant product labels for weeds controlled and directions for use.

SOIL PREPARATION

Plant cane: prepare the soil for planting according to good agricultural practices.

Ratoon cane: before application, remove any debris covering the soil that will be treated.

APPLICATION

Accurately calibrate spray equipment prior to treatment.

Apply **Authority® 480 SC** as an overall spray (plant cane) and as a directed interrow spray (ratoon cane) directly after planting or cutting and before emergence of newly planted or ratoon sugarcane.

Apply the recommended rate of **Authority® 480 SC** evenly as an overall application in sufficient water (200-400 l water/ha) to ensure adequate coverage of the soil surface.

The performance of **Authority® 480 SC** is not affected by light or temperature and the product is not volatile therefore an application made to dry soil will remain on the soil surface for an extended period until activated by rainfall or irrigation.

Authority® 480 SC applied at the lower rates will control Yellow nutsedge (*C. esculentus*) only

Soil type:

Apply **Authority® 480 SC** as a pre emergent treatment to soils with a clay content >15%.

The use of a pre emergent **Authority® 480 SC** application on soils with a lower clay content may adversely affect the performance of the product.

Increase the rate of **Authority® 480 SC** within the recommendations as the clay content and the cation exchange rate (CEC) of the soil increases. Use higher rates for soils of pH less than 7.0 and lower rates for pH greater than 7.0 within the rate range.

EARLY POST-EMERGENCE APPLICATION TO PLANT AND RATOON CANE AND TO WEEDS

In situations where a mixed stand of weeds have already started to germinate and emerge, **Authority® 480 SC** may be applied in a tank mixture with either MCPA, ametryn, paraquat or Trooper 320SL depending upon the circumstances, in order to achieve knockdown and residual control of emerged weeds and extend the range of weeds controlled. In certain conditions residual control may also be enhanced by the addition of the tank mix partner.

Timing of early post-emergence treatments to weeds should be such that watergrass should be no larger than 1 – 4 leaves, grasses 1 – 2 leaves and broadleaves 0 to 30mm.

Refer to the relevant product labels for weeds controlled and follow all Directions for Use. The *SASRI Herbicide guide* can also be consulted for additional information.

Follow the APPLICATION and SOIL TYPE recommendations as for Pre-emergent applications above.

LATE POST-EMERGENCE APPLICATION TO PLANT AND RATOON CANE FOR YELLOW WATERGRASS CONTROL

Authority® 480 SC when applied as a post emergent herbicide provides control of yellow watergrass [*Cyperus esculentus*]. Apply with a suitable surfactant (non-ionic, mineral oil, organosilicone) at the 6 to 8 leaf stage of the watergrass.

The rate at which **Authority® 480 SC** alone is applied as a post emergent treatment provides inadequate control of non-germinated weeds and will only provide short term control of yellow watergrass with limited soil activity (some suppression of purple watergrass may be achieved).

Where a mixed weed population exists in addition to yellow watergrass, **Authority® 480 SC** can be applied in a tank mix with MCPA as detailed below to provide control of a broader weed spectrum.

SOIL PREPARATION

Post emergent application

The soil surface should be free of trash/debris otherwise penetration of the spray and uptake will be adversely affected.

APPLICATION

Apply the recommended rate of **Authority® 480 SC** evenly as an overall application in sufficient water (200-400 ℓ water/ha) to ensure adequate coverage of the soil surface.

Apply **Authority® 480 SC** in combination with a suitable surfactant/wetter [non-ionic; mineral oil; organosilicone] (eg. Tronic, Break-Thru, Agral 90) to yellow watergrass(*C. esculentus*) from the 6 - 8 leaf growth stage.

APPLICATION RATES

Rates of AUTHORITY® 480SC	SOIL CLASSIFICATION CHART		
	Coarse	Medium	Fine
	Sand	Sandy clay loam	Silty clay loam
	Loamy sand	Sandy clay	Silty clay
	Sandy loam	Silt loam	Clay loam
		Silt	Clay
Pre-emergence	Not recommended	1.25 to 1.9 ℓ/ha	1.5 to 1.9 ℓ/ha
Pre- to early Post-emergence	Not recommended	1.25 ℓ + MCPA or ametryn or acetochlor or diuron or paraquat or Trooper	
Late Post-emergence	0.55 ℓ/ha + surfactant or 0.55 ℓ/ha + MCPA		

Table 1. Pre-Emergence application in plant- and ratoon sugarcane for the control of purple watergrass (*Cyperus rotundus*)

Timing	Rate of use	Soil type	Comments
Pre-emergence	1.9 l/ha	<ul style="list-style-type: none"> • Fine soil • Medium soil 	<p>Depending upon the soil type and where there is a mixed population of sedges including <i>C. rotundus</i> or where <i>C. rotundus</i> is dominant.</p> <p>Annual application will result in reduction of sedge tuber population.</p> <p>Refer to “List of weeds controlled by Authority® 480 SC below.</p>

Table 2. Pre-Emergence application in plant - and ratoon sugarcane for the control of grasses and broadleaves as listed as well as yellow watergrass

Timing	Rate of use	Soil type	Comments
Pre-emergence	<p>1.25 l/ha + 3 l Ametryn 500SC</p> <p>OR</p> <p>1.25 l/ha + 2 l Acetochlor 900EC</p> <p>OR</p> <p>1.25 l/ha + 2.5 l Diuron 800SC</p>	<ul style="list-style-type: none"> • Fine soil • Medium soil 	<p>The weeds controlled by the tank mixture will include the weeds listed under List of weeds controlled by Authority® 480 SC and the weed spectrum as listed on the label of the particular tank mixture product</p> <p>Additional weeds that will be controlled with the tank mixtures include :</p> <p><i>Acacia mearnsii</i> <i>Panicum schinzii</i></p> <p>At this rate of Authority® 480 SC purple watergrass (<i>C. rotundus</i>) will only be suppressed.</p> <p>Only <i>P. maximum</i> that has germinated from seed will be controlled.</p>

Table 3. Early Post Emergence application in plant- and ratoon sugarcane for the control of grasses, broad leaves and yellow watergrass.

Timing	Rate of use	Soil type	Comments
Early post-emergence	1.25 l/ha + 4 l MCPA 400SL OR 1.25 l/ha + 3 l Ametryn 500SC OR 1.25 l/ha + 0.5 – 1.0 l paraquat 200SL OR 1.25 l/ha + 1.0 l Trooper 320SL (Lowveld only, not to be used in KZN)	<ul style="list-style-type: none"> • Fine soil • Medium soil 	<p>Apply the tank mixture as a directed interrow spray to increase the weed spectrum and improve residual control of weeds that have already germinated.</p> <p>The weeds controlled by the tank mixture will include the weeds listed under "List of weeds controlled by Authority® 480 SC" and the weed spectrum as listed on the label of the particular tank mixture product</p> <p>Additional weeds controlled with the tank mix include:</p> <ul style="list-style-type: none"> • <i>Acacia mearnsii</i> • <i>Amaranthus spinosus</i> • <i>Ipomeae purpurea</i> • <i>Portulaca oleracea</i> • <i>Sonchus spp.</i> • <i>Panicum maximum</i> (>2 leaf) • <i>Panicum schinzii</i> <p>At this rate of Authority® 480 SC, purple watergrass <i>C. rotundus</i> will only be suppressed.</p> <p>Only <i>P. maximum</i> that has germinated from seed will be controlled.</p>

Table 4. Late Post Emergence application for short term control close to canopy

Timing	Rate of use	Sedges	Broadleaf weeds	Grasses	Comments
Post-emergence (short term – for further detail see SASRI Herbicide guide)	0.55 l/ha + surfactant	<i>Cyperus esculentus</i> (6 to 8 leaf stage, just before flowering)			Use a non-ionic, mineral oil or organosilicone surfactant such as Tronic, Break-thru, Agral 90. Li700
	0.55 l/ha + 3 l MCPA 400 SL	<i>Cyperus esculentus</i>	Refer to MCPA 400SL label	Refer to MCPA 400SL label	Inter-row treatment only. This treatment will also provide knockdown of grasses and broadleaves as listed on the MCPA label

List of weeds controlled in sugarcane with the application of Authority® 480 SC:

Sedges	Broadleaf weeds	Grasses
<i>Cyperus rotundus</i> <i>Cyperus esculentus</i> <i>Bulbostylus hispidula</i>	<i>Ageratum conyzoides</i> <i>Amaranthus spp.</i> <i>Commelina benghalensis</i> <i>Conyza floribunda</i> <i>Datura stramonium</i> <i>Emex australis</i> <i>Ipomeae purpurea</i> <i>Portulaca oleracea</i> <i>Senecio madagascarensis</i> <i>Solanum nigrum</i> <i>Sonchus oleraceus</i> <i>Sysimbrium thellingii</i>	<i>Eleusine indica</i> <i>Setaria verticillata</i> <i>Digitaria sanguinalis</i> <i>Paspalum dilatatum</i> <i>Sorghum bicolor</i> <i>Panicum maximum (from seed only)</i>

Important Notes:

1. Refer to the note "MODE OF ACTION AND ACTIVATION" above and read carefully.
2. The registration holder does not accept responsibility for unlisted weeds.
3. Soil Moisture and rainfall influences the activity of **Authority® 480 SC**. Generally the rainfall necessary to initiate weed germination will be sufficient to activate **Authority® 480 SC**. However, performance will be influenced by the amount of humidity in the soil – the higher the humidity the more the product will dissolve and be made available for uptake by the weeds.
The activity of **Authority® 480 SC** is significantly adversely affected by low rainfall and should not be applied if these conditions are anticipated. High rainfall (>450mm) will also cause movement of the product in coarse soils which can result in poor weed and residual control.
4. The performance of **Authority® 480 SC** can also be affected by the soil type and texture. Generally weed control decreases as the texture progresses from coarse to fine. Therefore, higher rates are indicated in soils with a higher clay content and Cation Exchange Coefficient (CEC).
5. When using in tank mixtures follow all label directions for use provided by the manufacturer of the product.
6. When applied either as a pre-emergence or post emergence treatment to sugar cane a slight scorch may appear on the leaves. These symptoms are temporary and will disappear as the sugarcane plant grows.
7. Due to the specific mode of action of **Authority® 480 SC**, visual symptoms of desiccation, especially on sedges, can be delayed by up to more than 60 days. The speed at which the symptoms appear on the leaves is related to various factors such as the soil humidity, the soil type and the speed of development of the sedges.

FLUE CURED TOBACCO

Use the higher rate of **Authority® 480 SC** for improved broadleaf weed control and on soils with higher clay content. Apply **Authority® 480 SC** in a tank mix with Command 4SC for improved broadleaf weed and grass control. Apply Butisan S or Frontier Optima for improved grass and broadleaf control as a sequential spray and not as a tank mix, immediately after application of **Authority® 480 SC**. Consult the respective labels of Butisan S, Frontier Optima and Command 4SC.

Authority® 480 SC should be applied within 4 days of transplanting onto a good weed-free tilth.

Nozzles should be mounted over the interrow and a directed spray aimed to include the top of the ridge and the base of the plants on either side so as to avoid contact with the heart of the plant.

Apply treatment with flat fan nozzles in a spray volume of up to 200l/ha.

Rainfall or irrigation is necessary for activation of the herbicide.

Excessive rainfall and high soil moisture content may lead to incomplete weed control on the ridges due to movement of **Authority® 480 SC**.

APPLICATION RATES

RATE OF AUTHORITY® 480SC	SEDGES	BROADLEAF WEEDS	GRASSES
400 – 470 ml/ha	<i>Cyperus esculentus</i> <i>Cyperus rotundus</i>	<i>Acanthospermum hispidum</i> <i>Ageratum conyzoides</i> <i>Amaranthus spp.</i> <i>Chenopodium album</i> <i>Commelina benghalensis</i> <i>Galinsoga parviflora</i> <i>Nicandra physaloides</i> <i>Physalis angulata</i> <i>Richardia scabra</i> <i>Tagetes minuta</i>	
400 ml + 1 l/ha Command® 4EC OR 400 ml + 0.8 l/ha Butisan® S OR 400 ml + 0.70 l -1.2 l/ha Frontier® Optima	<i>Cyperus esculentus</i> <i>Cyperus rotundus</i>	<i>Acanthospermum hispidum</i> <i>Ageratum conyzoides</i> <i>Amaranthus spp.</i> <i>Chenopodium album</i> <i>Commelina benghalensis</i> <i>Galinsoga parviflora</i> <i>Nicandra physaloides</i> <i>Physalis angulata</i> <i>Richardia scabra</i> <i>Tagetes minuta</i>	<i>Digitaria sanguinalis</i> <i>Echinochloa colona</i> <i>Eleusine coracana</i> <i>Eragrostis spp</i> <i>Panicum maximum</i>

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