



SHARDA MESOTRIONE 480 SC

Reg. No. L10657 L, Act No. 36 of 1947 | Reg. Nr. L10657, Wet Nr. 36 van 1947

A suspension concentrate systemic pre- and post-emergence herbicide for the control of annual broadleaf weeds, grasses and the suppression of certain weeds in maize.

'n Suspensiekonsentraat sistemiese voor en na-opkoms onkruid doder vir die beheer van eenjarige breëblaaronkruid, grasse en die onderdrukking van sekere onkruid in mielies.

UN Not classified

ACTIVE INGREDIENT:

mesotrione (callistemone) 480 g/l

UN Nie geklassifiseer

AKTIEWE BESTANDDEEL:

mesotrioon (callistemoon) 480 g/l

Registration Holder | Registrasiehouer

Sharda International Africa (PTY) LTD
Reg. No./Reg. Nr. 2010/002268/07
P. O. Box/Posbus 82021, Southdale, 2135
Tel: 031-7643011 /087 8222397

BATCH NUMBER
LOTNUMMER

DATE OF MANUFACTURE
DATUM VAN VERVAARDIGING

NET CONTENTS /
NETTO INHOUD

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HARMFUL
SKADELIK



1. WARNINGS:
 Withholding periods: (Minimum number of days between last application and harvest or grazing).
Maize Harvest and grazing 56 days
 • May irritate the eyes and skin.
 • Keep out of reach of children, unformed persons and animals.
 • Store in a cool, dry place away from food and feed.
 • **Do not use in sweet corn or popcorn.**
Aerial application: (Only pre-emergence applications). 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.
 • **Re-entry:** do not enter treated area until spray deposit has dried, unless wearing protective clothing.
 Although this remedy has been extensively tested under a 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 weed 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 failure of the user to follow the label instructions or to the occurrence of conditions, which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

2. PRECAUTIONS:
 • Do not eat, drink or smoke whilst handling this product.
 • Prevent contamination of food, feed, drinking water and eating utensils.
For safety when mixing:
 • Wear eye protection (face shield), if you get SHARDA MESOTRIONE 480 SC in your eyes, flush it out immediately with running water for at least 15 minutes.
 • Wear rubber gloves. If you get it on your skin, wash it off at once.
 • Do not get it on your clothes, change your clothes.
 • Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsing to the contents of the spray tank before destroying the container.
For safety when spraying:
 • Avoid inhalation of spray mist.
 • Avoid contact with the spray as far as possible.
 • Avoid spray drift onto susceptible crops, grazing, rivers, dams and areas not under treatment.
For safety after spraying:
 • Clean applicator thoroughly after use.
 • Do not spray, drain or flush equipment on or near trees or plants or where their roots may be exposed.
 • Dispose of wash water where it will not contaminate crops, grazing, rivers, dams or areas not under treatment.
 • Destroy empty container and do not re-use for any other purpose.
 • Change and wash your work clothes.
 • Wash yourself.

3. RESISTANCE
 For resistance management, SHARDA MESOTRIONE 480 SC is a group code F2 herbicide. Any weed population may contain individuals naturally resistant to SHARDA MESOTRIONE 480 SC and other group code F2 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 SHARDA MESOTRIONE 480 SC or any other group code F2 herbicides.
 To delay herbicide resistance:
 • Avoid excessive 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 INSTRUCTIONS:
4.1 General
 • Do not use SHARDA MESOTRIONE 480 SC on sweet corn, popcorn and inbred parent lines of maize hybrids or newly released cultivars without first consulting with your chemical supplier or with the seed company in the season directly after soil pH adjustment with lime.
 • Do not apply SHARDA MESOTRIONE 480 SC through any irrigation system other than a centre pivot system.
 • Disturbance of soil after both pre- and/or post-emergence applications can result in re-germination of weeds resulting in reduced weed control.
4.2 Follow-on crops:
 The following waiting periods should be adhered to:
 Wheat and barley 1 month
 Grain sorghum 2 months
 Potatoes 6 months
 Soybeans, dry beans, groundnuts, 9 months
 sunflowers and cotton
 All other crops 24 months
 All rotational crops should be planted only after thorough cultivation. Since the product is established by microbial activity, periods of low microbial activity might extend the residual activity of SHARDA MESOTRIONE 480 SC.
Warning: Possible damage to triazine sensitive crops
 • Where soils have been treated with lime to correct the soil pH, the possibility of crop damage increases dramatically in fields where triazines were previously applied. This is due to the triazine molecules being replaced on the clay complex with calcium cations and the triazine thus becoming more available in the soil-water complex.
 • No triazine sensitive crops should be planted in the season after the soil pH adjustment has been done with lime. This applies even if triazines were used at crop rotation rates in previous years. Only maize should be planted in the season directly after soil pH adjustment with lime.
 • Triazine sensitive crops include all broadleaf crops e.g. different bean crops, sunflowers and all cereals e.g. wheat.
 • These warnings however do not guarantee that no damage would be experienced to even the following maize crop as large volumes of previously applied triazines might now be available depending on the volume of lime applied and the rainfall experienced.
Warning: Possible increased efficacy, phytotoxicity and residual action
 • Increasing the soil pH levels above 7 could produce conditions for increased efficacy and reduced selectivity. This increased pH may also result in increased soil residual action by certain herbicides influencing the choice of following crops especially under irrigation.
 • In situations where pH adjustments has been done, take care when sulphanyl urea herbicides, triazolopyrimidine sulfonamide herbicides and imidazolinone herbicides, which are all sensitive to soil pH fluctuations, have been used or are about to be used.
 • Contact your local SINGENTA representative to discuss crop rotation and crop protection programmes to follow before embarking on any pH adjustment programme.
4.3 Factors affecting weed control:
4.3.1 Pre-emergence application:
 • A well prepared seedbed, free of clods and weeds is a requirement for good pre-emergence weed control.
 • Prolonged dry soil conditions after a pre-emergence application may result in reduced control of germinating weeds.
 • In soils with abnormal high organic matter or organic matter residues on the soil surface e.g. burnt trash or 'stoppers' reduced residual action may be seen.
 • Do not use SHARDA MESOTRIONE 480 SC under stress conditions e.g. water logging, severe cold, excessive rain, low pH, etc.
 • Tank mixtures of SHARDA MESOTRIONE 480 SC with organophosphates e.g. chlorpyrifos should be avoided as damage to the maize might occur.
 • SHARDA MESOTRIONE 480 SC should not be applied in cropping systems where food irrigation is used.

4.3.2 Post-emergence application:
 • When applying SHARDA MESOTRIONE 480 SC post-emergence, make sure that the application is on the true leaves of the weeds - cotyledons are not true leaves.
 • Applications should be done on weeds that are actively growing. SHARDA MESOTRIONE 480 SC is a systemic herbicide, which should be absorbed and translocated to be effective. This is not possible with plants under stress.
 • Avoid drift to adjacent crops.
 • When weeds are droughted, heat, lack of fertility, flooding or prolonged cooling temperatures, control can be reduced or delayed since the weeds are not actively growing. Weed escapes may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if application of SHARDA MESOTRIONE 480 SC is delayed until the stress conditions have ended and weeds are once again actively growing. Care should be taken that the target weeds are still within the indicated growth stages at application.
 • Temporary crop injury (bleaching) may occur under extreme weather conditions or when the crop is under stress due to inadequate or abnormally high moisture levels or extreme temperatures. Prolonged overcast conditions may also lead to temporary crop bleaching.
 • Do not apply SHARDA MESOTRIONE 480 SC in tank mixture with organophosphates insecticides e.g. chlorpyrifos.
 • Do not apply SHARDA MESOTRIONE 480 SC within 7 days before or within 7 days after organophosphate (e.g. terbufos) or carbamate (e.g. methomyl) insecticides for foliar applications.
5. DIRECTIONS FOR USE: Use only as indicated.
5.1 Dilution water:
 Use only clean water and buffer with a registered buffer.
5.2 Mixing instructions:
 Fill the spray or pre-mix tank with clean water and engage agitator. Mixture must be continued throughout the mixing and spraying operation. Resuspending the spray mixture if agitation was suspended for longer than 5 min. When the spray or premix tank is half full with water, add SHARDA MESOTRIONE 480 SC slowly and agitate until completely dispersed.
 If tank mixed, add SHARDA MESOTRIONE 480 SC first to the water. Then add all the other suspension concentrates e.g. PRIMA-GRAM GOLD and only thereafter the emulsifiable concentrates e.g. KARATE or METAGAN GOLD or DUAL GOLD. Lastly add the adjuvant and then continue to fill the tank to the required level with water whilst agitating.
5.3 Ground application:
 SHARDA MESOTRIONE 480 SC must be applied the same day as mixing. Apply by means of a tractor mounted boom sprayer which is correctly calibrated with continuous agitation to deliver at least 200 - 300 l spray mixture/ha. Avoid overlapping of spray swaths. In case of certain pre-emergence applications with hydraulic nozzles and post emergence applications with sleeve boom sprayers the water volume can be lowered to 100 l spray volume/ha. However, the use of the registered adjuvants at the correct rates, correct nozzles and nozzle spacing, adequate coverage and nozzle sizes are then very important. The

disregard of these factors will lead to poor control of certain weeds.
 Flat fan hydraulic nozzles (110°) are recommended for optimum coverage.
 In certain cases, sleeve boom sprayers may be used for post-emergence applications.
 • Sleeve boom sprayers must be correctly calibrated, well maintained and fitted with the correct nozzles.
 • The air flow system on a sleeve boom sprayer should work properly and sprays should always cover the target plant fully.
 • The use recommendations as on this label should be followed and no changes in rates or product combinations or adjuvants should be done other than indicated in this label.
 • Droplet sizes that are prone to drift should be eliminated by the correct choice of nozzles.
 • No pre-emergence applications of SHARDA MESOTRIONE 480 SC should be done with sleeve boom sprayers.
 • If these prescriptions are not adhered to the registration holder cannot be held responsible for any non performance or damages suffered.
 Rain or irrigation of 10 - 20 mm is needed after application to leach the chemical into the germinating zone. If this precipitation does not happen within 14 days of application, reduced efficacy can be expected.
5.4 Aerial application (SHARDA MESOTRIONE 480 SC is only registered pre-emergence for aerial application in maize)
Avoid chemical drift at all times.
 Aerial application of SHARDA MESOTRIONE 480 SC 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. Drift should be avoided at all times. It is therefore essential that the following criteria are met:
5.4.1 Application parameters:
 • **Volume:** A volume of 25 - 30 l/ha is recommended. As SHARDA MESOTRIONE 480 SC 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 per cm² must be recovered at the target.
 • **Droplet size:** A droplet spectrum with a VMD of 350 - 400 microns is recommended. Ensure that the production of fine droplets (less than 150 microns) 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.
5.4.2 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 end-drift (within target field) or ex-drift (outside target field).
 • The operator must use a set up 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.
5.4.3 Meteorological conditions:
 • The difference in temperature between the wet and dry bulb thermometers, of a whirling hygrometer, should not exceed 6°C.
 • Stop spraying if the wind speed exceeds 15 km/h or reduces to less than 5 km/h.
 • Aerial application of SHARDA MESOTRIONE 480 SC must not be done under turbulent, unstable conditions during the heat of the day when rising thermals and downdrafts occur.
 • Also note that the application of SHARDA MESOTRIONE 480 SC 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.
 • Under the following climatic conditions, it can cause serious damage as far as 3 to 5 km from the nearest spray path of the aircraft:
 • cloudy weather with relative humidity above 80 % and low air movement of less than 5 km per hour. When such conditions prevail, aerial application should NOT be carried out where sensitive crops, crop seedlings, deciduous fruit trees and grape vines in budding or early development stages are present within 5 km of the nearest spray path of the aircraft.
 • Ensure that the aerial spray operator knows which fields to spray. Supply the precise identification to the operator of the fields to be sprayed preferably by means of a map or GPS or the operator indicate to the operator adjacent environmental sensitive areas or sensitive neighbouring crops, bushes or water sources that could be affected by the pesticide. Obtain an assurance from the aerial spray operator that the above requirements will be met and that relevant data will be compiled in a logbook and kept for future reference.
5.5 Centre pivot application (Only pre-emergence in maize)
 SHARDA MESOTRIONE 480 SC and DUAL GOLD can be applied through a well-operated and well-maintained centre pivot irrigation system.
 The centre pivot should apply between 4.5 mm and 7.5 mm of water when applying 265 ml SHARDA MESOTRIONE 480 SC/ha and 710 ml DUAL GOLD/ha. Control should be for about 56 days where after the follow-on application should be applied by tractor sprayer.
 KARATE can be added to this pre-emergence mixture to control cutworms at the registered rate (70 ml/ha).
 • Calculate the injection rate carefully and make sure it is correct.
 • Apply within 2 days of planting.
 • Application should be done to fields which are well prepared and with no germinating or established weeds.
 • Applications should only be done through centre pivots equipped with an injector system.
 • Once SHARDA MESOTRIONE 480 SC has been applied on the whole of the centre pivot area, the injector should be set to apply the following water volumes:
 • 10 mm water per ha when clay content < 20%.
 • 15 mm water per ha when clay content is 20 - 35%.
 • 20 mm water per ha when clay content > 35%.
 • Keep soil wet for a period of 7 - 14 days after application.
 • Be aware that the distribution of SHARDA MESOTRIONE 480 SC and DUAL GOLD will only be as good as the application of the irrigation water.
 • Do not apply chemicals through the irrigation water in excessive wind speeds (< 6 ms⁻¹).
 • Be careful when the irrigation system overlap at the end of the cycle area as serious over dosage and possible damage could occur.
 • Care should be taken when applying chemicals through the centre pivot as breakages or stoppages could lead to major over application of the chemicals.
 • Care should be taken not to contaminate boreholes or dams with accidental spillages of chemicals in the irrigation system.
 Injection of the chemicals dose or at the centre is preferable. Both the injector pump and the water pump should be fitted with valves to stop injection as soon as the pivot's forward movement is stopped. The main irrigation water supply line should also be fitted with a non-return valve to prevent treated water to run back into the supply source.

6.1. MAIZE:
 • The clay content of the soil does not affect the dosage rate of SHARDA MESOTRIONE 480 SC.
 • SHARDA MESOTRIONE 480 SC can be applied pre- or post-emergence of either the crop or the weeds.
 • The pre-emergence application of SHARDA MESOTRIONE 480 SC must be done on a well-prepared weed-free seedbed to ensure an even distribution.
 • If SHARDA MESOTRIONE 480 SC is applied as indicated, at least 28 - 56 days control of the weeds as listed can be expected.
6.1.1 Pre-emergence application of SHARDA MESOTRIONE 480 SC plus S-METOLACHLOR 915 EC:
 (This pre-emergence application should be followed up with post-emergence applications of registered mixtures of SHARDA MESOTRIONE 480 SC, S-METOLACHLOR 960 EC AND ATRAZINE 291g/l + TERBUTHYLAZINE 291g/l SC approximately 5 - 6 weeks later, as indicated.)

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
104 ml/ha	218 - 710 ml/ha
Botanical name	Common Name
Acanthospermum hispidum	upright starbur
Chenopodium album	white goosefoot
Echinochloa colona	marsh grass
Nicandra physaloides	apple-of-Peru
Phytalis angulata	wild gooseberry

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
104 ml/ha	284 - 710 ml/ha
Botanical name	Common Name
Tagetes minuta	khaki weed

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
156 ml/ha	320 - 710 ml/ha
Botanical name	Common Name
Chenopodium carinatum	green goosefoot
Setaria pallida-fusca	red bristle grass

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
156 ml/ha	426 - 710 ml/ha
Botanical name	Common Name
Eleusine indica	goose grass
Panicum schinzii	sweet buffalo grass

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
208 ml/ha	426 - 710 ml/ha
Botanical name	Common Name
Amaranthus hybridus	common pigweed
Brachiaria eruciformis	sweet signal grass
Datura ferox	large thorn apple
Eragrostis curvula	weeping love grass
Hibiscus trionum	bladder weed
Polygonum aviculare	prostrate knotweed

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
208 ml/ha	568 - 710 ml/ha
Botanical name	Common Name
Cleome monophylla	spindlepod
Commelina benghalensis	Benghal wandering Jew
Digitaria sanguinalis	crab fingergrass
Hibiscus cannabinus	kenaf
Triumfetta pilosa	

SHARDA MESOTRIONE 480 SC Plus S-METOLACHLOR 915 EC	
260 ml/ha	710 ml/ha
Botanical name	Common Name
Urochloa panicoides	herringbone grass
Xanthium strumarium	cocklebur

6.1.2 Post-emergence application of SHARDA MESOTRIONE 480 SC plus S-METOLACHLOR 960 EC AND ATRAZINE 291g/l + TERBUTHYLAZINE 291g/l plus an adjuvant
 • SHARDA MESOTRIONE 480 SC must be applied post emergence when the target grasses are between the 2 - 3 leaf stage
 • broadleaf weeds are between the 2 - 6 leaf stage.
Recommended adjuvants: In all post emergence applications of SHARDA MESOTRIONE 480 SC an adjuvant must be used. The following adjuvants are recommended:
 • Arel at 200 ml/100 l spray volume
 • Breaktru at 50 ml/100 l spray volume
 • Complement Super at 100 ml/ha
 • Penetrex at 500 ml/100 l spray volume
 • Solitaire at 100 ml/100 l spray volume
 • Tronic at 500 ml/ha
 To enhance the activity on larger weeds 250 ml 2,4-D can be added to the tank mixtures mentioned below. The addition of 2,4-D is recommended for the control of morning glory and other problem weeds.
 • This post-emergence application should be preceded by a pre-emergence application of SHARDA MESOTRIONE 480 SC plus S-METOLACHLOR 915 EC as indicated on the labels.

SHARDA MESOTRIONE 480 SC (104 ml/ha) PLUS S-METOLACHLOR 960 EC (203 - 508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
Amaranthus hybridus	common pigweed
Crotalaria sphaerocarpa	mealie Crotalaria
Galinsoga parviflora	gallant soldier
Hibiscus trionum	bladder weed
Tagetes minuta	khaki weed
Xanthium strumarium	Cocklebur

SHARDA MESOTRIONE 480 SC (104 ml/ha) PLUS S-METOLACHLOR 960 EC (203 - 508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
Cleome monophylla	Spindlepod
Datura ferox	large thorn apple
Datura stramonium	thorn apple

SHARDA MESOTRIONE 480 SC (156 ml/ha) PLUS S-METOLACHLOR 960 EC (203 - 508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
Bidens bipinnata	Spanish blackjack
Bidens pilosa	Blackjack
Tagetes minuta	khaki weed

SHARDA MESOTRIONE 480 SC (156 ml/ha) PLUS S-METOLACHLOR 960 EC (305 - 508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
The above weeds plus	
Citrullus lanatus	bitter apple

SHARDA MESOTRIONE 480 SC (208 ml/ha) PLUS S-METOLACHLOR 960 EC (271 - 508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
The above weeds plus	
Commelina benghalensis	Benghal wandering Jew
Ipomoea purpurea	common morning glory
Tribulus terrestris	dubbeltjie
Hibiscus trionum	bladder weed

SHARDA MESOTRIONE 480 SC (208 ml/ha) PLUS S-METOLACHLOR 960 EC (406 - 508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
The above weeds plus	
Digitaria sanguinalis	crab fingergrass
Eleusine indica	goose grass
Amaranthus hybridus	common pigweed

SHARDA MESOTRIONE 480 SC (260 ml/ha) PLUS S-METOLACHLOR 960 EC (508 ml/ha) PLUS ATRAZINE 291g/l + TERBUTHYLAZINE 291 g/l (416 ml/ha) PLUS ADJUVANT	
Botanical name	Common Name
The above weeds plus	
Crotalaria sphaerocarpa	mealie Crotalaria

Ploughing and preparing a good fine weed-free seedbed is of utmost importance and essential. A cultivation between the two herbicide applications should be done in order to spray the second application pre-emergence of the weeds but post-emergence of the maize. Crop rotation with broad leaf crops should also be implemented in order to reduce the seed bank by using other grass herbicides.