

L157274 ZIMB/02P PPE 336322

Dual Magnum[®]

960EC

syngenta[®]

Precautions:

1. Handle with care: avoid splashing / contact; poisonous by swallowing, inhalation and contact with the skin.
2. DANGEROUS TO FISH.
3. KEEP OUT OF REACH OF CHILDREN.
4. KEEP APART FROM FOOD, FOOD-STUFFS, seeds and fertilisers.
5. Store in original container in a cool, dry place and KEEP UNDER LOCK AND KEY.
6. Use only on the crops for which the product is registered.
7. Avoid drift onto adjacent crops or soil.
8. After use, wash sprayer out thoroughly and dispose of washings in a safe place, eg. on waste ground. DO NOT contaminate water supplies.
9. Triple rinse empty container and add rinsate to the spray mixture.
10. Destroy empty container and place in secure disposal site. DO NOT use for any other purpose.



DATE OF MANUFACTURE:
DATUM VAN Vervaardiging:

BATCH NO:
LOT-NO:

TM

5 Litres

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S-PAC

DESCRIPTION:
LBL LFT S BOOKLET 4 TO 16 PG/RH 130x140 MM

SCALE:
1:1

ISSUE NO:
SYN002

ISSUE DATE:
03.08.2009

290228

Symptoms of Poisoning: No case of human poisoning is on record.

First Aid: If poisoning is suspected, stop work immediately and seek medical advice. In case of contact with skin and eyes, wash immediately with plenty of water. Rinse splashes from eyes with abundant fresh and clean water for at least 10 minutes. If inhaled move to clean air. If swallowed, give a large quantity of medical charcoal in plenty of water.

Note to Physician: No specific antidote is known. Apply symptomatic therapy.

Warranty: Before applying the product read the attached package leaflet.

The user bears the risk for damage resulting from factors beyond the manufacturer's control.

Resistant strains of weeds may develop or may exist against which herbicides may be less effective. Since the occurrence of such strains cannot be forecast, neither the manufacturer nor its distributors can assume responsibility for any loss or damage caused by failure to control resistant weeds.

All recommendations for the use of the herbicide are based on the current state of the manufacturer's knowledge. Since the manufacturer cannot control the farmers' choice of herbicides, its application, use, storage or processing of the product or other agronomic practices, the manufacturer cannot assume responsibility therefore.

Mode of Action: Dual Magnum® 960 EC is a selective pre-emergence herbicide. It is absorbed by the shoots of the germinating weeds before emergence above ground.

Spectrum of Activity: The following weeds will normally be controlled by Dual Magnum® 960 EC at the recommended rates:

<i>Brachiaria eruciformis</i>	Sweet signal-grass
<i>Brachiaria deflexa</i>	Annual brachiaria

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Chloris virgata
Dactyloctenium aegyptium
Digitaria sanguinalis
Echinochloa crusgalli
Echinochloa colonum
Eleusine indica
Panicum laevifolium
Panicum novemnerve
Setaria pumila
Setaria verticillata
Urochloa panicoides

Feather-top chloris
 Crow's foot
 Crab finger-grass
 Barn-yard millet
 Jungle rice grass
 Rapoko grass
 Vlei panicum
 Black seed panicum
 Annual timothy
 Burgrass
 Garden urochloa

Control of the following weeds may be variable depending on dosage applied, soil types and subsequent weather conditions:

<i>Amaranthus hybridus</i>	Cape pigweed
<i>Amaranthus spinosus</i>	Thorny pigweed
<i>Amaranthus thunbergii</i>	Red pigweed
<i>Commelina benghalensis</i>	Wandering Jew
<i>Nicandra physalodes</i>	Apple of Peru

Yellow nutsedge (*Cyperus esculentus*)

Up to 95% control of yellow nutsedge can be obtained on soils with less than 35% clay (not turf soils) provided the following conditions are met:

1. Field (Annual) Crops
 - (a) Planting is immediately preceded by a thorough cultivation to ensure that all germinated yellow nutgrass plants are destroyed.
Where the plants have emerged ploughing with a mould-board plough is essential.
 - (b) A relatively fine, even and firm seed bed is prepared.
 - (c) Herbicide application is followed by at least 10-20 mm of soft soaking rain (or irrigation) depending on soil type; to move herbicide into the soil prior to the emergence of yellow nutsedge (normally 7-10 days after cultivation). Should any nutsedge or other weeds emerge after application these should be destroyed by a light cultivation.

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2. Plantation (Perennial) Crops

- (a) Acceptable yellow nutsedge control may be achieved when any emerged nutsedge plants are destroyed just prior to the application of Dual Magnum® 960 EC which must be followed by 20 mm of irrigation or rain to activate the herbicide.
- (b) Here a contact herbicide is to be used as a tank mix with Dual Magnum® 960 EC to destroy emerged weeds compatibility must be checked. Observe the WARNINGS given in the contact herbicide label.
- (c) Any nutsedge which emerges after the application of Dual Magnum® 960 EC should be destroyed mechanically or by using a contact herbicide.

Other features and Warnings

1. Use strictly as recommended.
2. Ensure that the seed of the crop planted is covered with at least 20 mm of firm soil before application of Dual Magnum® 960 EC. Avoid deep press wheel depressions.
3. For transplanted crops ensure that the soil in the root zone is firm and that no depressions are left around the stems of transplanted seedlings. Treated soil must not be allowed to come into contact with the roots of seedling transplants.
4. SPECIAL WARNING: TOBACCO. When Dual Magnum® 960 EC is applied POST PLANTING this should be done within a few days (less than one week) of transplanting. CONSULT THE TOBACCO RESEARCH BOARD GROWERS HANDBOOK FOR DIRECTIVES AND APPLICATION GUIDELINES.
5. Not recommended on heavy vlei or poorly drained soil types.
6. Do not apply to inbred parent lines of maize hybrids.

Directions for use: TRB Certificate No.: 11-14-C-85.

Dosage Rates

(Full cover application) (see table overleaf)

It is recommended that prior to selecting a dosage rate, the user:

- a. Submits soil samples from lands to be treated for percentage clay determination;

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- b. Decides what weed spectrum is to be controlled. If yellow nutsedge suppression is desired - Select Rate I from table. If the spectrum is mainly annual grasses - select Rate II.

Ground Application

Dual Magnum® 960 EC can be applied with any high volume sprayer, properly calibrated and fitted with sufficient agitation. Choice of fan-type nozzles should be such as to ensure even distribution and optimal recovery of the spray liquid. A spray pressure of 200 kPa should not be exceeded. The recommended amount of Dual Magnum® 960 EC should be applied in at least 150 litres of water per hectare.

Aerial Application: Dual Magnum® 960 EC may be applied by aircraft provided that uniform distribution and adequate chemical recovery within the treated area can be obtained. These conditions may be achieved where the following parameters are met:

1. Increase the selected dosage rate by 10 or 15% to compensate for chemical losses.
2. To ensure even distribution apply 25 litres of spray mixture per hectare (preferably 30 litres per hectare).
3. a) The aircraft should be calibrated and the boom fitted with flatfan nozzles in order to achieve a recovered spray VMD of 450 microns on a 16 metre flight interval for Pawnee and 18 metre track for Thrush Commander Aircraft.
3. b) The optimal flight height is three metres.
4. DO NOT spray under hot, dry windy conditions. The relative humidity must be above 50% and wind speed not exceeding 16 km/h
5. MARK THE LANDS TO BE SPRAYED ACCURATELY.
6. It is essential to contact the aerial spray contractor to obtain an assurance the parameters 2, 3 and 4 are met at the time of application.

Preparing the mixture

(a) Dual Magnum® 960 EC alone.

- Half fill spray tank with water, then pour the required amount

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of Dual Magnum® 960 EC into the spray tank whilst the water is being stirred. Top up with water to the final volume required.

(b) Dual Magnum® 960 EC in tank mixture.

When SC, FW or WP formulations of herbicides are mixed with Dual Magnum® 960 EC, the SC, FW or WP must be added first. Dual Magnum® 960 EC diluted with water must be added last, just before the required volume is reached. Ensure thorough agitation of the mixture in the tank during mixing and spraying.

Compatibility: Dual Magnum® 960 EC is compatible with the herbicides mentioned in the table on page 7 when mixed as recommended and soft water is used. The quality of water can affect the compatibility of Dual Magnum® 960 EC with other products. A compatibility test must be done with the water and products to be used. Tank mixtures must be applied immediately after mixing. Do not pre-mix large quantities. Do not mix Dual Magnum® 960 EC with products not mentioned on this table without consulting a representative of the supplier.

Registered by: Syngenta Agro Services

P.O. Box 1088, Harare
Suite Za, Julia's Parade, Sam Levy's Village
Borrowdale, Tel.: 0772 402 477

Emergency Call Number:

Swiss Toxicological Information Centre
(24 h) +41 44 251 51 51

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Manufacturer:

Syngenta Crop Protection AG, Basle, Switzerland

Dosage Rates (full cover application)
Not recommended on heavy vlei type soils or on poorly drained soil types.

Crop	% Clay	Litres Dual Magnum® 960 EC				Suggested registered broadleaf herbicides – see respective labels
		When used alone		In combination with registered broadleaf herbicide		
		I*	II**	I*	II**	
Cotton	<30 >30	— —	— —	0.7 0.9	0.7 0.7	Cotoran®, Cotogard® or Gesagard®
Field and kidney beans	<30 >30	1.0 1.2	0.9 1.0	— —	— —	Nil
Soyabeans	<30 >30	1.0 1.2	0.9 1.0	0.7 0.9	0.7 0.7	terbutryne or metribuzin
Groundnuts	<30 >30	1.0 1.2	0.9 1.0	0.7 0.9	0.7 0.7	terbutryne or Gesagard®
Sunflowers	<30 >30	1.0 1.2	0.9 1.0	0.7 0.9	0.7 0.7	Gesagard®
Potatoes	<30 >30	— —	— —	1.0 1.2	0.7 0.9	
Sugarcane	<30 >30	— —	— —	1.0 1.2	0.7 0.9	Gesaprim® or Gesapax®. Use 1.4 l/ha Dual Magnum® 960 EC against <i>Panicum maximum</i> .
Maize	<16 16-30 >30	1.0 1.0 1.2	0.9 0.9 1.0	0.7 0.9 1.0	0.65- 0.7 0.7 0.9	Gesaprim®. * Use lower rate against atrazine - susceptible grasses.
Tobacco TRB Certificate No.: 11-14-C-85	<30	1.5	1.0			For application directives and guidelines refer to TRB Growers Handbook.

* With the need of yellow nutsedge suppression.

** Without yellow nutsedge suppression.

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

PRODUCT INFORMATION

Product name : DUAL MAGNUM 960 EC
Design code : A9396B
Use : Herbicide
Company : Syngenta Crop Protection AG
 Postfach
 CH-4002 Basel
 Switzerland
Telephone : +41 61 323 11 11
Telefax : +41 61 323 12 12
**Emergency tele-
phone number** : +44 1484 538444
E-mail address : safetydatasheetcoordination@syngenta.com



Irritant

Dangerous for
the environment

2. HAZARDS IDENTIFICATION

May cause sensitization by skin contact.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	EC-No. (REACH Regis- tration Number)	Symbol(s)	R-phrases	Concentration
S-metolachlor	87392-12-9		Xi, N	R43 R50/53	87.27 % W/W
amines, tallow alkyl, ethoxylated	61791-26-2		N, Xn	R22 R41 R51/53	1 - 5 % W/W
solvent naphtha (petroleum), heavy arom.	64742-94-5	265-198-5	Xn, N	R51/53 R65 R66 R67	1 - 5 % W/W

Substances for which there are Community workplace exposure limits.

For the full text of the R-phrases mentioned in this Section, see Section 16.

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4. FIRST AID MEASURES

- General advice** : Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.
- Inhalation** : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.
- Skin contact** : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.
- Eye contact** : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label.
Do NOT induce vomiting.
- Medical advice** : There is no specific antidote available.
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media** : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam
or
Water spray
- Extinguishing media which shall not be used for safety reasons** : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during fire fighting** : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.
- Special protective equipment for fire-fighters** : Wear full protective clothing and self-contained breathing apparatus.
- Further information** : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Refer to protective measures listed in sections 7 and 8.
- Environmental precautions** : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
- Methods for cleaning up** : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
- Additional advice** : If the product contaminates rivers and lakes or drains inform respective authorities.

7. HANDLING AND STORAGE

HANDLING

- Advice on safe handling** : No special protective measures against fire required.
Avoid contact with skin and eyes.
When using do not eat, drink or smoke.
For personal protection see section 8.

STORAGE

- Requirements for storage areas and containers** : No special storage conditions required.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep out of the reach of children.
Keep away from food, drink and animal feedingstuffs.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	Exposure limit(s)	Type of exposure limit	Source
S-metolachlor	10 mg/m ³	8 h TWA	SYNGENTA

ENGINEERING MEASURES

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

If airborne mists or vapors are generated, use local exhaust ventilation controls.

Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.

Where necessary, seek additional occupational hygiene advice.

PERSONAL PROTECTIVE EQUIPMENT

- Protective measures** : The use of technical measures should always have priority over the use of personal protective equipment.

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When selecting personal protective equipment, seek appropriate professional advice.

Personal protective equipment should be certified to appropriate standards.

- Respiratory protection** : No personal respiratory protective equipment normally required. A particulate filter respirator may be necessary until effective technical measures are installed.
- Hand protection** : Chemical resistant gloves should be used. Gloves should be certified to an appropriate standard. Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure. The breakthrough time of gloves varies according to the thickness, material and manufacturer. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Suitable material
Nitrile rubber
- Eye protection** : Eye protection is not usually required. Follow any site specific eye protection policies.
- Skin and body protection** : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material. Wash with soap and water after removing protective clothing. Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.) Wear as appropriate:
impervious protective suit

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state** : liquid
- Form** : liquid clear
- Colour** : yellowish to brown
- Odour** : not characteristic, weak
- pH** : 5.2 at 1 % w/v
- Flash point** : 120 °C at 1,013.25 hPa DIN 51758
- Oxidizing properties** : not oxidizing
- Explosive properties** : Not explosive
- Density** : 1.104 g/cm³
- Miscibility** : Miscible
: Miscible
- Viscosity, dynamic** : 110.7 mPa.s at 20 °C
: 34.98 mPa.s at 40 °C
- Surface tension** : 32.3 - 32.4 mN/m at 20 °C

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10. STABILITY AND REACTIVITY

Hazardous decomposition products : Combustion or thermal decomposition will evolve toxic and irritant vapors.

Hazardous reactions : None known.
Hazardous polymerisation does not occur.
Stable under normal conditions.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity : LD50 rat, 2,267 mg/kg

Acute inhalation toxicity : LC50 rat, 4.06 mg/l , 4 h

Acute dermal toxicity : LD50 rabbit, > 2,020 mg/kg

Skin irritation : rabbit: Non-irritating

Eye irritation : rabbit: Non-irritating

Sensitisation : guinea pig: A skin sensitizer

Long term toxicity
S-metolachlor : Did not show mutagenic effects in animal experiments.
Did not show carcinogenic effects in animal experiments.
Did not show reproductive toxicity effects in animal experiments.
Did not show teratogenic effects in animal experiments.

: No adverse effect has been observed in chronic toxicity tests.

12. ECOLOGICAL INFORMATION**ELIMINATION INFORMATION (PERSISTENCE AND DEGRADABILITY)**

Mobility
S-metolachlor : S-metolachlor has medium mobility in soil.

Bioaccumulation
S-metolachlor : Does not bioaccumulate.

ECOTOXICITY EFFECTS

Toxicity to fish : LC50 Salmo trutta (trout), 4.3 mg/l , 96 h

Toxicity to aquatic invertebrates : EC50 Daphnia magna (Water flea), 24.0 mg/l , 48 h

Toxicity to aquatic plants

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S-metolachlor : EbC50 Pseudokirchneriella subcapitata (green algae), 33 µg/l ,
72 h
ErC50 Pseudokirchneriella subcapitata (green algae), 72 µg/l ,
72 h

13. DISPOSAL CONSIDERATIONS

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

14. TRANSPORT INFORMATION**Land transport***ADR/RID:*

UN number: 3082

Class: 9

Labels: 9

Packaging group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (S-METOLACHLOR)

Environmentally hazardous: Environmentally hazardous

Sea transport*IMDG:*

UN number: 3082

Class: 9

Labels: 9

Packaging group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (S-METOLACHLOR)

Marine pollutant : Marine pollutant

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Air transport

IATA-DGR:

UN/ID No.: UN 3082

Class: 9

Labels: 9

Packaging group: III

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (S-METOLACHLOR)

15. REGULATORY INFORMATION

Labelling according to EC Directives

Hazardous components which must be listed on the label:

- S-metolachlor

Symbol(s)	: Xi N	Irritant Dangerous for the environment
R-phrases(s)	: R43 R50/53	May cause sensitization by skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases(s)	: S 2 S13 S20/21 S24 S35 S37 S57	Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs. When using do not eat, drink or smoke. Avoid contact with skin. This material and its container must be disposed of in a safe way. Wear suitable gloves. Use appropriate container to avoid environmental contamination.

16. OTHER INFORMATION

Further information

Text of R-phrases mentioned in Section 3:

R22	Harmful if swallowed.
R41	Risk of serious damage to eyes.
R43	May cause sensitization by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

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Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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