

MISTRAL 700 WG




Reg. no. L8457 Act/Wet 36 of/van 1947

**READ THE LABEL BEFORE USE
KEEP OUT OF REACH OF CHILDREN AND ANIMALS**

GROUP	C1	HERBICIDE
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A water dispersible granule herbicide for the control of annual broad leaf weeds and grasses in crops as listed.	'n Waterdispergeerbare korreloonkruiddoder vir die beheer van eenjarige en breëblare in gewasse soos aangedui.
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 WARNING	Hazard statements Very toxic to aquatic life with long lasting effects.
	Precautionary statements Avoid release to the environment. Collect spillage.

ACTIVE INGREDIENT/AKTIEWE BESTANDDEEL

Metribuzin (triazine)..... 700 g/kgMetribusien (triasien)

NET MASS/NETTO MASSA

..... kg

REGISTRATION HOLDER/REGISTRASIEHOUER

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UN no.: 3077

EMERGENCY NUMBERS:

Griffon Poison Information Centre: +27 82 446 8946
 Tygerberg Poison Information Centre: +27 861 555 77

Batch number
 Date of Manufacture
 Expiry date

Lotnommer
 Datum van Vervaardiging
 Vervaldatum

WARNINGS

- Very toxic to aquatic life with long lasting effects.

Withholding periods (Minimum number of days between last application and harvest.):

Lucerne.....25 days

Barley.....120 days

- Harmful if swallowed.
- Store in a cool dry place away from food, feed, fertilizer and other agricultural products.
- **Aerial application:** Notify all the 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 adjacent areas, water or any other area that is not under treatment.
- **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 variety of conditions the registration holder does not warrant that it will be effective under all conditions. The activity and efficacy of the product may be affected by factors such as abnormal 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, 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 the 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.

PRECAUTIONS

- If medical advice is needed, have product container or label at hand.
- Keep out of reach of children.
- Read label before use.
- Avoid release to the environment.
- Collect spillage.
- Dispose of contents/ container to an approved waste disposal plant.

- Do not inhale fumes or spray mist.
- Wear rubber gloves and face shield when handling the concentrate.
- Avoid skin and eye contact. Wash with soap and water after accidental skin contact. Flush out eyes with clean running water after accidental eye contact. Wash contaminated clothing with water and soap.

- Do not eat, drink or smoke while mixing or applying or before hands and face are washed.
- Prevent contamination of food, feed, drinking water and eating utensils.
- Avoid drift of spray to other crops, grazing, rivers, dams or any other area that is not under treatment.
- Destroy the empty container and do not re-use for any other purpose.
- Clean the applicator after use. Dispose of the rinsate where it will not contaminate crops, grazing, rivers, dams and boreholes.

RELEVANT SUBSTANCES

Chemical name	w/w %	CAS no.
Metribuzin	>60%	21087-64-9
Reaction product of naphthalene, propan-2-ol, sulfonated and neutralized by caustic soda	<10%	EC no.: 939-368-0
Disodium maleate	<10%	371-47-1

FIRST AID

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). First aider: Pay attention to self-protection.

Take the container label or product name with you when seeking medical attention.

Eye contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician if necessary.

Inhalation: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Call a physician.

Ingestion: If conscious, rinse mouth thoroughly with water. Never give anything by mouth to an unconscious or convulsing person. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomit, rinse mouth and administer more water. If symptoms persist, call a physician.

TOXICOLOGICAL INFORMATION

Antidotes

No specific antidote. Treat symptomatically.

Symptoms of human poisoning

None known.

NOTICE TO THE USER: This agricultural remedy is to be used only according to the directions of this label. It is an offense under the Act to use this product inconsistent with the directions on the label.

RESISTANCE WARNING

MISTRAL 700 WG is classified as a Group Code C1 Herbicide. Any weed population may contain individuals which are naturally resistant to **MISTRAL 700 WG** and other Group Code C1 herbicides. The resistant individuals can eventually dominate the weed population if these herbicides are used continuously and exclusively. These resistant weeds may not be controlled by **MISTRAL 700 WG** or any Group Code C1 herbicide. To delay resistance the following can be done:

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

For specific information on resistance management contact the registration holder of this product.

MODE OF ACTION

C1: Inhibition of photosynthesis at PSII – serine 264 binders.

USE RESTRICTIONS

General

- Do not plant any crop, except potatoes and sugar cane, within a period of six months after a **MISTRAL 700 WG** application.
- Crops such as asparagus, beetroot, carrots, maize, soya beans and turnips may be planted 6 months after **MISTRAL 700 WG** has been applied.
- A period of 12 months should lapse between application of **MISTRAL 700 WG** and planting of crops such as brassicas, cucurbits, onions, peas, beans, wheat, tobacco, strawberries etc.
- The above-mentioned waiting periods can increase if **MISTRAL 700 WG** is applied to brackish soils or soils with a pH more than 7.
- Prior to planting and application of a subsequent crop, a deep and thorough ploughing operation (not less than 20 cm deep) should take place and a firm, fine, even seedbed without excessive plant rests should be prepared.
- Do not use **MISTRAL 700 WG** on poorly drained soils or soils with a compaction layer as these conditions might cause waterlogging which can lead to crop injury.

Potatoes

- Do not use **MISTRAL 700 WG** in winter grown potatoes or in areas where untimely frost might occur. Cold spells after a **MISTRAL 700 WG** application may cause crop injury and stunting of potato plants. There may also be differences in susceptibility to phytotoxicity between the various varieties. Under unfavourable growing conditions, the varieties Astrid, BP 1, Earliest of All, Koos Smit and Late Harvest will be more susceptible to damage.
- Good quality potato seed without any disease should be used. Plants from seed of 60 g and smaller are more prone to crop damage.

- Too early ridging or disturbance of soil after application may stimulate germination of weeds as well as causing a shift of the treated soil on the plant row resulting in a higher concentration of **MISTRAL 700 WG** on the row which can lead to phytotoxicity. It is recommended that a period of six weeks should lapse between application of **MISTRAL 700 WG** and ridging of potatoes or that application should take place after ridging and before emergence.
- Do not use **MISTRAL 700 WG** in potatoes in the “Sandveld” of the Western Cape (Aurora, Clanwilliam, Darling, Eendekuil, Elandsbaai, Het Kruis, Hopefield, Lambertsbaai, Leipoldville, Paleisheuwel, Piketberg, Redelinghuys, Velddrif, Vredenburg, Vredendal, etc.).

Lucerne

- **MISTRAL 700 WG** should only be applied to established lucerne, i.e. at least one year old.
- Apply after cutting or grazing before the lucerne starts to grow actively. Some chlorosis might appear on the lucerne but it will disappear within a short while and have no effect on the yield.
- Do not apply **MISTRAL 700 WG** in lucerne grown on alkaline soils (pH > 7), soil with mineral deficiencies or where waterlogging can occur.
- Use **MISTRAL 700 WG** only on the cultivars CUF 101, Grananda and SA. Standard.

Barley

- Do not apply **MISTRAL 700 WG** in combination with any of the post-emergence grass herbicides or within 7 days before or after application thereof.
- Do not apply **MISTRAL 700 WG** in combination with any Bromoxynil formulation in barley.
- Control of *Emex australis* might be variable if it exceeds the two-leaf stage at application.
- Slight chlorosis of the crop might appear after application, but this symptom will disappear and will not have any effect on the yield.

Tomatoes

- Apply **MISTRAL 700 WG** as a directed spray in transplanted tomatoes at least 14 days after transplantation. Do not spray over the tomato plants.
- Cold, wet conditions after application might cause leaf damage and stunting.

DIRECTIONS FOR USE

Use only as directed.

Compatibility

MISTRAL 700 WG is compatible with DIUREX® 800 SC, DIUREX® 800 WG, AMETREX® 500 SC, AMETREX® 800 WG, PARAQUAT® 200 SL and ALANEX® 480 CS. The quality of the dilution water can vary from farm to farm and from year to year therefore a physical compatibility test should be carried out prior to mixing products. The restrictions on the labels of the products with which **MISTRAL 700 WG** is mixed should be adhered to.

Mixing Instructions

Half fill spray tank with clean water. Pre-mix the required volume **MISTRAL 700 WG** with a small amount of water until all the granules are dissolved. Add to the spray or mixing tank while agitating the spray solution. Fill the tank to capacity while agitation is continued. If **MISTRAL 700 WG** is mixed with another chemical the label instructions should be followed. It is important that the spray mixture is kept in suspension during the mixing and application processes by thorough and continuous agitation.

APPLICATION

Ground application

MISTRAL 700 WG can be applied by any suitable medium or high volume spray apparatus provided it is equipped with an efficient agitation system, it is able to distribute the spray solution evenly over the target area and it is calibrated correctly. It is recommended that **MISTRAL 700 WG** is applied in 200–300 L water per ha and that suitable flat fan nozzles are used.

Application can be made pre-emergence or early post-emergence to weeds not taller than 3–5 cm. Rain or irrigation of 15–20 mm at 5–10 days after application is necessary to leach the **MISTRAL 700 WG** into the soil in order to obtain the full benefit of the residual action.

Aerial application

Aerial application of **MISTRAL 700 WG** 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 Pesticides). 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 spray volume of 30 L per ha is recommended. As the 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 this product is applied aerially at a lower volume rate than recommended.
- Droplet coverage: 30–40 droplets per cm² must be recovered at the target area.
- Droplet size: A droplet with a VMD of 350–450 micron is recommended. Limit the production of fine droplets less than 150 microns (high drift and evaporation potential) to a minimum.
- Flying height: Maintain the height of the spray boom 3–4 metres above the target. Do not spray when the aircraft dives, banks or is in a climb.
- Use suitable atomising equipment that will produce the desired droplet size and coverage, but which will ensure the minimum loss of product. The spraying system must produce a droplet spectrum with the lowest Relative Span.
- Position all atomisers within the inner 60–75% of the wing span to prevent droplets from entering the wingtip vortices.
- The differences in temperature between the wet and dry bulb thermometers of a whirling hygrometer should not exceed 8 °C.
- Stop spraying if the wind speed exceeds 15 km/h.
- Stop spraying under turbulent unstable and dry conditions during the heat of the day.

- Spraying under temperature inversion conditions (spraying in or above the inversion layer) and/or high humidity conditions (relative humidity 80% and above) 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 drifting of the suspended spray cloud away from the target field.
 - c) Ensure that the Aerial Spray Operator knows exactly which fields to spray.
- 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.

APPLICATION RATES

CROP / TARGET	CLAY %	DOSAGE RATE / HA	REMARKS
Barley	-	140 g	Apply as an early post-emergence spray in the four-leaf stage of the crop (growth stage 14 of Zadoks scale) as a ground or aerial application.
Lucerne	0–10 11–20 21–35	750 g 1.0 kg 1.2–1.5 kg	Apply only to dormant established lucerne which is at least one year old, prior to weed emergence. Use the higher dosage rate on soils with a higher clay percentage. Please refer to the section about Lucerne under “USE RESTRICTIONS”.
Potatoes	0–10 11–20 21–35	Ground application 750 g 1.0 kg 1.2–1.5 kg	Apply immediately after planting and before emergence of potatoes. Apply the higher rate where the soil clay percentage is higher.
	0–10 11–20 21–35	MISTRAL 700 WG plus ALANEX® 384 EC Tank mixes MISTRAL 700 WG 500 g plus ALANEX® 384 EC 5.0 L MISTRAL 700 WG 750 g plus ALANEX® 384 EC 5.0 L MISTRAL 700 WG 1.2–1.5 kg plus ALANEX® 384 EC 5.0 L	For improved control of annual grasses and the suppression of Yellow nutgrass (<i>Cyperus esculentus</i>), ALANEX® 384 EC can be used in a tank mix with MISTRAL 700 WG .

CROP / TARGET	CLAY %	DOSAGE RATE / HA	REMARKS
		Aerial application	<p>Apply in a least 30 L but preferably in 40 L of water per ha. Please refer to the section under aerial application.</p> <p>NOTE: Please refer to Potatoes under USE RESTRICTIONS.</p>
	0–10	1.0 kg	
	11–20	1.2 kg	
	21–35	1.2–1.5 kg	
Sugarcane Plant and ratoon cane Pre-emergence	6–20	2.5–3.0 kg or 1.4–2.0 kg plus 2.0 kg/2.0 L DIUREX® 800 WG/ DIUREX® 800 SC	Do not apply to soils with less than 6 % clay. Apply evenly over moist soil after planting, or harvest before weed emergence. Use the higher rate for suppression of <i>Cyperus esculentus</i> (Yellow nutgrass) and longer residual control of broadleaf weeds on soils with higher clay percentages.
	21–35	3.0 kg or 1.7–2.0 kg plus 2.0 kg/2.0 L DIUREX® 800 WG/ DIUREX® 800 SC	For the control of grasses and especially <i>Panicum maximum</i> , application should be done pre-emergence.
Early post-emergence	6–20	2.5–3.0 kg or 1.4–2.0 kg plus 2.0 kg/2.0 L DIUREX® 800 WG/ DIUREX® 800 SC plus 3.0–4.0 L AMETREX® 500 SC	Do not apply to soils with less than 6% clay. Grass weeds (especially <i>Panicum maximum</i>) should not be developed beyond the 2–3 leaf stage whilst broad leaf weeds should not be developed further than the 4–6 leaf stage at application. Where the above-mentioned weeds have developed past the recommended stage, it is advised that Paraquat 200 SL is added to the spray

CROP / TARGET	CLAY %	DOSAGE RATE / HA	REMARKS
			mixture at the recommended rate.
	21–35	3.0 kg or 1.7–2.0 kg plus 2.0 kg/2.0 L DIUREX® 800 WG/ DIUREX® 800 SC plus 3.0–4.0 L AMETREX® 500 SC/ AMETREX® 800 WG 1.9 kg	Use the higher rate on heavier soils or where a longer residual is desired or where suppression of <i>Cyperus esculentus</i> is needed.
Sugarcane continued Aerial application Early post-emergence	6–35	2.5 kg plus 2.5 kg/2.0 L DIUREX® 800 WG/ DIUREX® 800 SC	Apply evenly in at least 30 L, but preferably in 40 L water per ha. Please refer to the section under aerial application.
Tomatoes Transplanted	0–10 11–20 21–35	750 g 1.0 kg 1.2–1.5 kg	Apply to transplanted tomatoes at least 14 days after transplantation and after the transplant has taken root. Do not apply over the tomato plants, but use a directed spray between the tomato rows. Grasses should preferably be sprayed not later than at emergence and broadleaf weeds should not have developed further than the 4-leaf stage. Use the higher rate at the higher percentages.

ALANEX® 384 EC (Reg. No. L4725) is the registered trade mark of ADAMA, Israel.

AMETREX® 800 WG (Reg. No. L8113) is the registered trade mark of ADAMA, Israel.

AMETREX® 500 SC (Reg. No. L4656) is the registered trade mark of ADAMA, Israel.

DIUREX® 800 WG (Reg. No. L8139) is the registered trade mark of ADAMA, Israel.

DIUREX® 800 SC (Reg. No. L5334) is the registered trade mark of ADAMA, Israel.

WEED SPECTRUM

The following weeds are normally controlled by **MISTRAL 700 WG**:

BROADLEAF WEEDS

<i>Acalypha eckloni</i>	
<i>Acanthospermum hispidum</i>	upright starbur
<i>Ageratum conyzoides</i>	blue weed
<i>Amaranthus deflexus</i>	pigweed
<i>Amaranthus hybridus</i>	common pigweed
<i>Amaranthus spinosus</i>	thorny pigweed
<i>Amaranthus thunbergii</i>	red pigweed
<i>Anagallis arvensis</i>	pimpernel
<i>Anthemis cotula</i>	stink mayweed
<i>Argemone mexicana</i>	yellow flowered Mexican poppy
<i>Bidens pilosa</i>	common blackjack
<i>Capsella bursa-pastoris</i>	shepard's purse
<i>Cenia turbinata</i>	goose daisy
<i>Chenopodium album</i>	white goosefoot
<i>Chenopodium carinatum</i>	green goosefoot
<i>Chenopodium murale</i>	nettle-leaved goosefoot
<i>Cirsium vulgare</i>	Scotch thistle
<i>Conyza canadensis</i>	horseweed fleabane
<i>Datura ferox</i>	large thorn apple
<i>Datura stramonium</i>	thorn apple
<i>Emex australis</i>	spiny emex
<i>Fumaria muralis</i>	fumitory
<i>Galinsoga parviflora</i>	gallant soldier
<i>Hibiscus trionum</i>	bladderweed
<i>Leucas martinicensis</i>	Bobbin weed
<i>Nicandra physaloides</i>	apple of Peru
<i>Physalis angulata</i>	wild gooseberry
<i>Polygonum aviculare</i>	prostrate knotweed
<i>Portulaca oleracea</i>	purslane
<i>Raphanus raphanistrum</i>	wild radish
<i>Richardia brasiliensis</i>	tropical Richardia
<i>Schukuhria pinnata</i>	dwarf marigold

<i>Sigesbeckia orientalis</i>	St Paul's wort
<i>Solanum retroflexum</i>	black nightshade
<i>Spergula arvenis</i>	corn spurry
<i>Stellaria media</i>	chickweed
<i>Tagetes minuta</i>	khaki weed
<i>Tribulus terrestris</i>	dubbeltjie
<i>Urtica urens</i>	small stinging nettle
<i>Verbena bonariensis</i>	purple top
<i>Xanthium spinosum</i>	spiny cocklebur
<i>Xanthium strumarium</i>	cocklebur

GRASSES

<i>Chloris virgata</i>	feathertop chloris
<i>Digitaria sanguinalis</i>	crab fingergrass
<i>Eleusine coracana</i>	African goosegrass
* <i>Panicum maximum</i>	common buffalo grass
<i>Panicum schinzii</i>	sweet buffalo grass
<i>Setaria verticillata</i>	sticky bristle grass
<i>Tragus racemosus</i>	large carrot-seed grass
<i>Urochloa panicoides</i>	garden Urochloa
* <i>Cyperus esculentus</i>	yellow nutsedge

* At least 3.0 kg **MISTRAL 700 WG** per ha should be used to control these weeds.

Variable Control

Pre-emergence control of the following weeds may be variable

<i>Cyperus esculentus</i>	yellow nutsedge
<i>Chenopodium album</i>	white goosefoot

NOTE: MISTRAL 700 WG should be applied to a fine, firm, even and well-prepared seedbed without excessive plant rests. Rain or irrigation of at least 10–15 mm is needed for pre-emergence applications to leach the **MISTRAL 700 WG** into the weed germination zones.

Excessive rain after application of **MISTRAL 700 WG** might cause excessive leaching, especially on soils with a low clay content, which in turn might affect the period of control of shallow germinating weeds.