GROUP	27	HERBICIDE

Mesotrione 480SC Herbicide

AGRICULTURAL

SUSPENSION

A herbicide for use in field corn for control of annual broadleaf weeds.

FOR SALE AND USE IN EASTERN CANADA ONLY

GUARANTEE:
Mesotrione ..... 480 g/L

Contains 1,2-benzisothiazolin-3-one at 0.002 % as a preservative.

READ THE LABEL AND BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN

CAUTION: EYE IRRITANT
POTENTIAL SKIN SENSITIZER

REGISTRATION NO.: **31163**
PEST CONTROL PRODUCTS ACT

Syngenta Canada Inc.
140 Research Lane, Research Park
Guelph, Ontario N1G 4Z3
Telephone: 1-877-964-3682

PAMPHLET

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

FIRST AID

IN CASE OF POISONING, contact a physician or a poison control centre **IMMEDIATELY.** Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

If swallowed, call a poison control centre or doctor **IMMEDIATELY** for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing, take off contaminated clothing. Rinse skin **IMMEDIATELY** with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

If inhaled, move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

If in eyes, hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

TOXICOLOGICAL INFORMATION

Treat symptomatically if ingested or in contact with eyes or skin. If gastric lavage is considered necessary, prevent aspiration of gastric material. Administration of activated charcoal may also be considered.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

May irritate eyes. Avoid contact with eyes. Potential skin sensitizer.

When handling the concentrate, wear a long sleeve shirt and long pants, chemical-resistant gloves and eye protection. Wash the outside of the gloves before removing. Wash splashes from skin and eyes IMMEDIATELY with plenty of water. While spraying, wear a long sleeve shirt and long pants. Wear chemical-resistant gloves if contact with spray nozzles is necessary. Avoid working in spray mist. Avoid all drift or contact with other vegetation. After spraying, wash hands and shower thoroughly with soap and water. While using product, do not eat, drink

or smoke. Wash hands and exposed skin with soap and water thoroughly before eating, drinking, smoking, applying cosmetics or using the toilet. Keep product away from food, drink and animal feed. Store product in original container, tightly closed and in a safe place.

DO NOT use or store product near heat or open flame. **DO NOT** apply beyond the field boundary.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at **www.croplife.ca**.

DO NOT enter or allow worker entry during the restricted entry interval (REI) of 12 hours after application.

STORAGE CONDITIONS

Always store product in original container with top closed in a cool, dry place. Avoid contamination of seed, feed and foodstuffs. Mesotrione 480SC Herbicide can be stored in freezing conditions. If frozen, allow to thaw and agitate thoroughly prior to use.

DECONTAMINATION AND DISPOSAL

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean up of spills.

CONTAINER DISPOSAL:
FOR DISPOSAL OF PLASTIC JUGS:
Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

FOR REFILLABLE CONTAINERS:
For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING, CALL 1-800-327-8633 (FASTMED)

GENERAL INFORMATION

Mesotrione 480SC Herbicide is a suspension concentrate herbicide that has soil residual activity and provides selective control or suppression of annual broadleaf weeds in field corn. Mesotrione 480SC Herbicide has a high level of crop safety to allow for flexibility in application timing in field corn.

In post-emergent applications, Mesotrione 480SC Herbicide is absorbed through the leaves and is rapidly translocated to the plant's growing points.

ENVIRONMENTAL HAZARDS

Toxic to small wild mammals, aquatic organisms and to non-target terrestrial plants. Observe buffer zones specified under DIRECTIONS FOR USE.

To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

DIRECTIONS FOR USE

FIELD CORN – EASTERN CANADA ONLY

1.) Pre-emergent Application

Apply Mesotrione 480SC Herbicide at 0.30 L per hectare in a spray volume of 200 L and a minimum pressure of 206 kPa (refer to the "*MIXING AND SPRAYING INSTRUCTIONS*" section of this label).

Mesotrione 480SC Herbicide will control:

lamb's-quarters	wild mustard
redroot pigweed	common ragweed (suppression)
Velvetleaf	

2.) Early Post-emergent Application - Spike to 2 leaf stage of corn and cotyledon to 2 leaf stage of weeds

Apply Mesotrione 480SC Herbicide at 0.30 L per hectare in a spray volume of 200 L and a minimum pressure of 206 kPa (refer to the "*MIXING AND SPRAYING INSTRUCTIONS*" section of this label).

Mesotrione 480SC Herbicide will control:

lamb's-quarters	wild mustard
redroot pigweed	common ragweed (suppression)
Velvetleaf	

3.) Late Postemergent Application - 3 to 8 leaf stage of corn and up to 8 leaf stage of broadleaf weeds

Apply Mesotrione 480SC Herbicide at 0.21 L per hectare in a spray volume of 100-200 L of water and a minimum pressure of 206 kPa (refer to the "*MIXING AND SPRAYING INSTRUCTIONS*" section of this label).
Always add a spray surfactant. Use the non-ionic surfactant AGRAL® 90 at 0.20% v/v.

For best results, apply Mesotrione 480SC Herbicide to actively growing weeds. Weeds that emerge after an application of CALLISTO 480SC Herbicide will be controlled after they absorb the herbicide from the soil provided there is sufficient moisture for uptake.

Mesotrione 480SC Herbicide will control:

eastern black nightshade	redroot pigweed
velvetleaf	common ragweed (suppression only)

up to the 8 leaf weed stage.

Pre-Harvest Intervals

Crops	**PHI (days)**
Field corn grain/stover	100
Field corn forage	90

USE PRECAUTIONS:

Mesotrione 480SC Herbicide may be used pre-emergent and postemergent on field corn.

Although Mesotrione 480SC Herbicide has a flexible recropping profile, certain crops may be sensitive to low concentrations in the soil. Therefore, careful consideration should be given to crop rotation plans prior to using Mesotrione 480SC Herbicide (refer to *"RECROPPING GUIDELINES"*).

Dry conditions following application may reduce the pre-emergent activity of Mesotrione 480SC Herbicide. If an activating rain (12 mm) is not received within 7-10 days after a pre-emergent application, rotary hoeing is suggested to activate the herbicide.

Do not apply to soils that contain less than 1% or more than 10% organic matter.

When applied post emergent, thorough coverage of emerged weeds is essential for effective control with Mesotrione 480SC Herbicide. Although weed competition is quickly halted, visual symptoms of dying weeds (discolouration) may take up to 2 weeks to appear depending on the weed species and growing conditions.

Optimum control of emerged weeds will be obtained when weeds are actively growing. Under unfavourable conditions, such as drought, heat, flooding, prolonged cool temperatures or insufficient fertility, adequate control may not be achieved and re-growth may occur.

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. The symptoms are most visible where excessive rates have been applied, such as sprayer overlaps. Corn quickly outgrows these effects and continues to grow normally.

Do not make a foliar postemergent application of any organophosphate or carbamate insecticide within 7 days before or 7 days after an Mesotrione 480SC Herbicide application or severe injury may occur to corn.

Severe corn injury and crop yield loss may occur if Mesotrione 480SC Herbicide is applied to corn crops that are treated with Lorsban™.

Do not cultivate corn within 7 days before or after a post emergent Mesotrione 480SC Herbicide application.

Make only one application of Mesotrione 480SC Herbicide per year.

As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

MIXING AND SPRAYING INSTRUCTIONS:

Buffer zones:

Field sprayer application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

DO NOT apply by air.

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of application	**Crop**	**Buffer zone (metres) required for the protection of:**	
		Aquatic habitat	**Terrestrial habitat**
Field sprayer*	Field corn	1	4

*For field sprayer application, buffer zones can be reduced with the use of drift reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the

labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labelled buffer zone can be reduced by 30%.

APPLICATION IN LIQUID FERTILIZERS:

Nitrogen solutions (such as 28-0-0 UAN), excluding suspension fertilizers, may replace water as a carrier for pre-emergence application in corn. Do not use nitrogen solutions as a carrier to corn that has emerged. Constant agitation is necessary to maintain a uniform mixture during application.

GROUND APPLICATION ONLY:

Water Volume:

Apply in 100-200 litres per hectare.

Spray Pressure:

206 – 300 kPa

Spray Nozzles:

Flat Fan with 50 mesh or larger screens. For uniform coverage and increased penetration of the crop canopy, set the nozzles at a downward angle of 90 degrees (90°).

Surfactant:

Postemergent applications of Mesotrione 480SC Herbicide must be applied with the non-ionic surfactant AGRAL 90 at 0.2% v/v (2.0 L for each 1000 L of spray mixture).

Mixing Procedure:

1. Ensure that the sprayer is totally clean.
2. Fill the sprayer half full with water. Engage gentle agitation.
3. Ensure that the agitation system is working properly and that it creates a rippling or rolling action on the water surface.
4. Add Mesotrione 480SC Herbicide slowly and agitate until completely dispersed. To ensure complete dispersion, wait 2 or 3 minutes after the last of the herbicide has been added to the tank.
5. Fill the tank to three quarters full with water.
6. Add the non-ionic surfactant if applicable (e.g., AGRAL 90) at 0.2% v/v.
7. Continue agitation while completing the filling of the sprayer with water.
8. Always ensure that agitation is maintained until spraying is completed, even if stopped for brief periods of time.
9. If agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying. **Mesotrione 480SC Herbicide must be sprayed the same day as mixing**.
10. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, Mesotrione 480SC Herbicide is a Group 27 herbicide. Any weed population may contain or develop plants naturally resistant to Mesotrione 480SC Herbicide and other Group 27 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

Where possible, rotate the use of Mesotrione 480SC Herbicide or other Group 27 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.

Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.

Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.

Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.

Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.

Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

For further information and to report suspected resistance, contact company representatives at 1-87-SYNGENTA (1-877-964-3682) or at www.syngenta.ca.

RECROPPING GUIDELINES:

Certain crops have been shown to be sensitive to low residues of Mesotrione 480SC Herbicide in the soil. The minimum recropping interval is the time between the last application of Mesotrione 480SC Herbicide and the anticipated date of planting of the next crop.

To avoid injury to subsequent crops after an application at the recommended rate of Mesotrione 480SC Herbicide, the following recropping intervals should be observed.

CROP	MINIMAL RECROPPING INTERVAL
Winter Wheat	3 months
Spring Wheat, Field Corn (grain or silage), Seed Corn, Sweet Corn	10 months
Alfalfa, Potato, Soybeans, Transplanted Tomato, White Beans	11 months
All Other Crops	Bioassay

Observe the recropping guidelines of any product(s) to be tank mixed with Mesotrione 480SC Herbicide.

In the event of crop failure, only field corn (grain or silage), seed corn, or sweet corn can be planted as a salvage crop in the same fields in which the failed crop was treated with Mesotrione 480SC Herbicide. An application of Mesotrione 480SC Herbicide must NOT be made to the salvage crop.

Land treated with Mesotrione 480SC Herbicide CAN ONLY BE PLANTED TO A CROP NOT LISTED IN THE PREVIOUS TABLE if a field bioassay can be successfully performed. The bioassay must indicate normal growth with no yield reductions.

A bioassay may be conducted in any year following the year of application to assess the tolerance of the tested crop intended for planting in the year following the bioassay. Do not conduct a bioassay in the year of application. When conducting a field bioassay, it is very important to select a representative area(s) of the field previously treated with Mesotrione 480SC Herbicide to plant the test crop(s).

FIELD BIOASSAY

1. **Representative Sample:**
   Ensure that soil parameters such as soil texture, depth of topsoil layer, soil pH and drainage of the test area selected are representative of the remainder of the field.
2. **Sample Size:**
   The seeded area of each selected bioassay crop must be large enough to ensure that reliable results are obtained. The seedbed preparations and seeding of the bioassay crop(s) should be conducted the same way as when the entire field would be planted.
3. **Other Residual Herbicides:**
   It is important that other herbicide products which are known to have residual activity were not applied to the field between the last application of Mesotrione 480SC Herbicide and the bioassay testing period. Avoid the use of other pesticides during the duration of the bioassay as they may damage the indicator crop(s).
4. **Comparisons:**
   Ideally, an untreated check strip in a neighbouring field should be established and monitored for comparison since growing conditions can vary greatly from year to year and may result in erroneous results.
5. **Assessment:**
   The site should be monitored regularly throughout the growing season. Watch for any damage to the crop such as thinning, yellowing or stunting. A yield sample should be taken and compared to an adjacent untreated field.

DO NOT ROTATE TO OTHER CROPS UNTIL THE BIOASSAY INDICATES NORMAL GROWTH WITH NO YIELD REDUCTIONS.
Failure to follow these recropping guidelines could result in injury to seeded crop(s).

ADHERE TO THESE PRODUCT LABELS FOR BROADLEAF WEEDS CONTROLLED, PRECAUTIONS, WARNINGS, RESTRICTIONS, TANK MIXING AND SPRAYING INSTRUCTIONS, ROTATIONAL CROPS AND DETAILED DIRECTIONS FOR USE REGARDING DOSAGE VARIATIONS ACCORDING TO SOIL TYPE.

SPRAYER CLEANUP:

To avoid subsequent injury to other crops, thoroughly clean application equipment immediately after spraying. Ensure that all traces of the product are removed. The following procedures are recommended:

1. Drain and flush tank, boom and all hoses for several minutes with clean water containing a household detergent. **Do not** clean the sprayer near desirable vegetation, wells or other water sources.
2. Fill the sprayer tank with clean water and add one litre of household ammonia (containing 3% ammonia) per 100 litres of water. Allow the solution to agitate for 15 minutes prior to flushing the solution through the boom and nozzles. Drain the system.
3. Remove the nozzles and screens and wash separately in a bucket containing the ammonia solution.
4. Thoroughly rinse the tank, hoses, booms, nozzles and screens with clean water for a minimum of 5 minutes to remove all traces of ammonia.
5. Dispose of all rinsings in accordance with provincial regulations.