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**In Case of Emergency, Call
1-800-327-8633 (FAST MED)**

Date of MSDS Preparation (Y/M/D): 2013-03-14

**For further information contact:
1-87-SYNGENTA (1-877-964-3682)**

MSDS prepared by:
Department of Regulatory & Biological Assessment
Syngenta Canada Inc.

SECTION – 1: PRODUCT IDENTIFICATION

Product Identifier: LUMAX[®] EZ HERBICIDE Formulation No.: A19414A
Registration Number: 30864 (Pest Control Products Act)
Chemical Classes: A benzoylcyclohexanedione herbicide.

Active Ingredient (%): Atrazine (10.2%) CAS No. : 1912-24-9
Chemical Name: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine
Chemical Class: Triazine Herbicide

Active Ingredient (%): Mesotrione (2.71 %) CAS No.: 104206-82-8
Chemical Name: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione
Chemical Class: Benzoylcyclohexanedione Herbicide.

Active Ingredient (%): S-metolachlor (27.1%) CAS No.: 87392-12-9
Chemical Name: Acetamide, 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)-, (S)
Chemical Class: Chloroacetanilide Herbicide

Product Use: A herbicide formulation to control weeds.

SECTION – 2 : COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen	WHMIS†
Attapulgitte Clay	Not Established	Not Established	Not Established	IARC 2B	
Atrazine (10.2%)	Not Established	5 mg/m ³ TWA	5 mg/m ³ TWA**	IARC Group 3	
S-metolachlor (27.1%)	Not Established	Not Established	10 mg/m ³ TWA ***	No	
Mesotrione (2.71%)	Not Established	Not Established	10 mg/m ³ TWA***	No	

** Recommended by NIOSH
 *** Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.
 Syngenta Hazard Category: C, S

SECTION – 3: HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

May be irritating skin. May cause an allergic skin reaction.

Hazardous Decomposition Products

Flammable hydrogen gas may be formed on contact with incompatible metals. See “Conditions to Avoid”, Section 10.

Physical Properties

Appearance: Light brown liquid.

Odour: Paint.

Unusual Fire, Explosion and Reactivity Hazards

Flammable hydrogen gas may be formed on contact with incompatible metals. See “Conditions of Avoid”, Section 10.

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Potential Health Effects

Relevant routes of exposure: Skin, eyes, mouth, lungs.

SECTION – 4: FIRST AID MEASURES

IF POISONING IS SUSPECTED, immediately contact the poison information centre, doctor or nearest hospital. Have the product container, label or Material Safety Data Sheet with you when calling Syngenta, a poison control centre or doctor, or going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Call the Syngenta Emergency Line [**1-800-327-8633 (1-800-FASTMED)**], for further information.

EYE CONTACT:	Flush eyes with clean water, holding eyelids apart for a minimum of 20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta, a poison control centre or doctor for treatment advice. Obtain medical attention immediately if irritation persists.
SKIN CONTACT:	Immediately remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. Flush skin with plenty of water for 15-20 minutes. Call Syngenta, a poison control centre or doctor for treatment advice.
INHALATION:	Move victim to fresh air. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call Syngenta, a poison control centre or doctor for treatment advice.
INGESTION:	If swallowed, immediately contact Syngenta, a poison control centre, doctor or nearest hospital for treatment advice. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person. Do not induce vomiting unless directed by a physician or a poison control centre. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer water.

NOTES TO PHYSICIAN:

There is no specific antidote if this product is ingested. Treat symptomatically. Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

MEDICAL CONDITIONS KNOWN TO BE AGGRAVATED:

None known.

SECTION – 5: FIRE FIGHTING MEASURES

Flash point and method: >101°C

Upper and lower flammable (explosive) limits in air: Not applicable.

Auto-ignition temperature: Not available.

Flammability: Not available.

Hazardous combustion products: Flammable hydrogen gas may be formed on contact with incompatible metals. See “Conditions to Avoid”, Section 10. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion. See also Section 7.

Conditions under which flammability could occur: Keep fire exposed containers cool by spraying with water.

Extinguishing media: Use water fog or mist, (avoid use of water jet), foam, carbon dioxide, dry powder or halon extinguishant. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. Contain run-off water with, for example, temporary earth barriers.

Sensitivity to explosion by mechanical impact: Not available.

Sensitivity to explosion by static discharge: Not available.

SECTION – 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Wear suitable protective clothing and equipment as described in Section 8 and/or the product label.

Procedures for dealing with release or spill:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Sections 7 and 8. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Scoop or sweep up material and place into a disposal container. Wash area with detergent and water. Pick up wash liquid with additional absorbent and place into compatible disposal container. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposal. Spillages or uncontrolled discharges into watercourses must be reported to the appropriate regulatory body.

SECTION – 7: HANDLING AND STORAGE

Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fibreglass/plastic containers. Concentrate should not be stored or maintained in long-term contact with galvanized steel, carbon steel, brass, cast iron or aluminium containers.

Handling practices: KEEP OUT OF REACH OF CHILDREN. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Avoid breathing vapours or spray mist. Wear full protective clothing and equipment (see Section 8). After work, rinse gloves and remove protective equipment, and wash hands thoroughly with soap and water after handling, and before eating, tobacco use, drinking, applying cosmetics or using the toilet. Wash contaminated clothing before re-use and separate from household laundry. Keep containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people

Appropriate storage practices/requirements: Store in original container only in a well-ventilated, cool, dry, secure area. Protect from heat, sparks and flame. Do not expose containers to temperatures below -10 °C or above 40 °C. Protect from sun and humidity. If frozen, mix product thoroughly prior to use. Separate from other products to prevent cross contamination. Rotate stock. Clean up spilled material immediately.

National Fire Code classification: Not regulated.

SECTION – 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Applicable control measures, including engineering controls: This product is intended for use in on-farm and commercial operations. Ensure work areas have ventilation, containment, and procedures sufficient to maintain airborne levels below the TLV. Warehouses, production area, parking lots and waste holding facilities must have adequate containment to prevent environmental contamination. Provide separate shower and eating facilities.

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

CONSULT THE PRODUCT LABEL FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS.

Personal protective equipment for each exposure route:

General: Avoid breathing dust, vapours or aerosols. Avoid contact with eye, skin and clothing. Wash thoroughly after handling and before eating, drinking, applying cosmetics, or handling tobacco.

INGESTION: Do not eat, drink, handle tobacco, or apply cosmetics in areas where there is a potential for exposure to this material. Always wash thoroughly after handling.

EYES: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

SKIN: Where contact is likely, wear chemical-resistant (such as barrier laminate, nitrile rubber, butyl rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride[PVC] or Vitton) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

INHALATION: A respirator is not normally required when handling this substance. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION – 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light brown liquid.

Formulation Type: Suspension concentrate.

Odour: Paint-like

pH: 4.7 (1% solution in deionized H₂O @ 25 °C).

Vapour pressure and reference temperature:	Atrazine:	2.9 x 10 ⁻⁷ mmHg @ 20 °C
	Mesotrione:	<4.3 x 10 ⁻⁸ mmHg @ 20°C
	S-metolachlor	2.8 x 10 ⁻⁵ mmHg @ 25 °C

Vapour density: Not available.

Boiling point: Not available.

Melting point: Not applicable.

Freezing point: Not available.

Specific gravity or density: 1.10 g/cm³ @ 20 °C

Evaporation Rate: Not available.

Water/oil partition coefficient:

Atrazine Technical :	2.5
Mesotrione Technical:	0.1
S-metolachlor Technical;	3.1

Odour threshold: Not available.

Viscosity: Not available.

Solubility in Water:	Atrazine:	33 mg/L @ 20 °C
	Mesotrione:	160 mg/L @ 20 °C
	S-metolachlor:	0.48 g/L @ @ 25 °C

SECTION – 10: STABILITY AND REACTIVITY

Chemical stability: Stable under normal use and storage conditions.

Conditions to avoid: Concentrate should not be stored in galvanized steel, carbon steel, or aluminum containers. Brass and/or cast iron fittings should not be used. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass/plastic.

Incompatibility with other materials: See “Conditions to Avoid”, Section 10.

Hazardous decomposition products: Flammable hydrogen gas may be formed on contact with incompatible metals. See “Conditions to Avoid”, Section 10.

Hazardous polymerization: Will not occur.

SECTION – 11: TOXICOLOGICAL INFORMATION

Acute toxicity/Irritation Studies (Finished Product):

Ingestion:	<u>Low Acute Toxicity</u> Oral (LD50 Female Rat):	5,000 mg/kg body weight
Dermal:	<u>Low Acute Toxicity</u> Dermal (LD50 Rat):	> 5,000 mg/kg body weight
Inhalation:	<u>Low Acute Toxicity</u> Inhalation (LC50 Rat):	> 2.58 mg/L air - 4 hours
Eye Contact:	<u>Minimally Irritating (Rabbit)</u>	
Skin Contact:	<u>Mildly Irritating (Rabbit)</u>	
Skin Sensitization:	<u>A Skin Sensitizer (Guinea Pig)</u>	

Reproductive/Developmental Effects

Atrazine:	None observed.
Mesotrione:	Not a reproductive hazard.
S-metolachlor:	None observed.

Chronic/Subchronic Toxicity Studies

Atrazine:	Cardiotoxicity in long term study with high doses (dogs).
Mesotrione:	Animal studies showed evidence of reduced bodyweight gain, increased liver and kidney weights, blood effects (polycythemia, reduced white blood cell count) and eye effects (cataract formation, keratitis). No known neurotoxic effects based on animal studies.
S-metolachlor:	None observed.

Carcinogenicity

Atrazine:	Mammary tumors (female Sprague-Dawley rats), sex and strain specific. None observed (male Sprague-Dawley rats, F-344 rats or mice).
Mesotrione:	Not carcinogenic in animal studies. Not mutagenic.
S-metolachlor:	Benign liver tumors at high dose levels (female rats).

Other Toxicity Information:

None.

Toxicity of Other Components

Attapulgitic Clay: May cause eye irritation.

Other materials that show synergistic toxic effects together with the product:

Target Organs

Active Ingredients

Atrazine: Heart.

Mesotrione: Eye.

S-metolachlor: Liver.

Inert Ingredients

Attapulgitic Clay: Eye.

SECTION – 12: ECOLOGICAL INFORMATION

Summary of Effects

Eco-Acute Toxicity

Atrazine:	Invertebrates (Water Flea) 48-hr LC ₅₀ /EC ₅₀	6.9 ppm
	Fish (Rainbow Trout) 96-hr LC ₅₀ /EC ₅₀	4.5 ppm
	Birds (12-day, Bobwhite Quail) LD ₅₀	940 ppm
S-metolachlor	Invertebrates (Water Flea) 48-hr LC ₅₀ /EC ₅₀	26 ppm
	Fish (Rainbow Trout) 96-hr LC ₅₀ /EC ₅₀	11.9 ppm
	Birds (Bobwhite Quail) LD ₅₀	> 2510 ppm
Mesotrione:	Invertebrates (Water Flea) 48-hr LC ₅₀ /EC ₅₀	900 ppm
	Fish (Rainbow Trout) 96-hr LC ₅₀ /EC ₅₀	> 120 ppm
	Birds (8-day dietary – Mallard Duck) LC ₅₀ /EC ₅₀	>5,200 ppm

Environmental Fate

The active ingredient, S-metolachlor, has a low bioaccumulation potential, slight to moderate mobility in soil, and low to moderate persistence in soil and water. The dissipation half-life in soil is 14-30 days. The main route of degradation is by microbial degradation and formation of bound residues.

Atrazine is biodegradable via microbial activity and other processes in soil and natural waters. It has a low bioaccumulation potential. Atrazine is moderately persistent in soil. Under typical conditions of use, the DT50 is between 18 and 70 days. Atrazine is moderately to highly mobile in soil.

Mesotrione has a low bioaccumulation potential, low mobility in soil but is moderately persistent to persistent in soil or water. The dissipation half-life in soil is 2-14 days and in water it is 30 days. The main route of degradation is by microbial degradation and formation of bound residues.

SECTION – 13: DISPOSAL CONSIDERATIONS

Waste disposal information: Do not reuse empty containers unless they are specifically designed to be refillable. Empty container retains product residue. Triple rinse, or equivalent, empty container, return rinse water to dilution mixture, and dispose of dilution mixture as a hazardous waste if it cannot be disposed of by use according to label instructions. Dispose of empty containers in accordance with local regulations. Consult provincial environment ministry for advice on waste disposal.

Industrial/commercial waste may be handled at licensed facilities only. Waste shipments must be securely packaged and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment.

SECTION – 14 : TRANSPORT INFORMATION

Shipping information such as shipping classification:

TRANSPORTATION OF DANGEROUS GOODS CLASSIFICATION - ROAD/RAIL

Not Regulated.

S-metolachlorS-metolachlor

SECTION – 15: REGULATORY INFORMATION

WHMIS classification for product: Exempt

This MSDS has been prepared in accordance with WHMIS requirements, but the data are presented under 16 headings.

Other regulations; restrictions and prohibitions

Pest Control Products (PCP) Act Registration No.: 30864

SECTION – 16: OTHER INFORMATION

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Syngenta will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years. This product is under the jurisdiction of the Pest Control Products Act and is exempt from the requirements for a WHMIS compliant MSDS. Hazardous properties of all ingredients have been considered in the preparation of this MSDS. Read the entire MSDS for the complete hazard evaluation of this product.

Prepared by: Syngenta Canada Inc.
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