




MATERIAL SAFETY DATA SHEET

Product Name: Killex Liquid Turf Herbicide (Green Cross)

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WHMIS	Protective Clothing	TDG Road / Rail
 Not Controlled by WHMIS		 Not Regulated

Section 1: Product and Company Information

Product Name:	Killex Liquid Turf Herbicide (Green Cross)
Product Use:	Weed Killer Herbicide for broadleaf weeds and brush
MSDS Record Number:	9811-Rev7
Synonyms:	Not available
Chemical Family:	Chlorophenoxy and benzoic herbicides
WHMIS Classification:	This product is regulated under the Pest Control Products Act and is exempt from WHMIS classification.
TDG Classification:	Not regulated unless shipped for disposal or offered for marine transport. See Section 14.
Manufacturer:	Scotts Canada Ltd. 2000 Argentia Road, Plaza 5, Suite #101 Mississauga, Ontario L5N 2R7
Supplier:	Same as Manufacturer
Emergency Telephone:	Medical Emergencies: 1-888-779-7919 Accident and Spill Emergencies: Canutec 1-613-996-6666
Other:	Pest Control Products Act Registration Number: 09811

Section 2: Composition and Ingredient Information

<u>Common Name</u>	<u>Chemical Name</u>	<u>CAS No.</u>	<u>Wt. %</u>
2,4-D, Dimethylamine	2,4-dichlorophenoxyacetic acid, dimethylamine salt	2008-39-1	10-30
Mecoprop, Dimethylamine	2-(2-Methyl-4-chlorophenoxy)propionic acid, dimethylamine salt	32351-70-5	15-31
Dicamba, Dimethylamine	Benzoic acid, 3,6-dichloro-2-methoxy-, compd. with N-methylmethanamine	2300-66-5	1-5

Note: See Section 8 of this MSDS for exposure limit data for these ingredients.



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Section 3: Hazards Identification

Appearance, Colour and Odour: Liquid. Clear, amber-brown liquid. Strong fishy odour.

Primary Route(s) of Exposure: Eye, Skin, Inhalation, Ingestion, Skin Absorption

POTENTIAL HEALTH EFFECTS:

ACUTE (short term): See Section 8 for exposure controls

Eye: May cause severe eye irritation and reversible eye damage.

Skin: This product may be irritating and may cause skin sensitization reactions in certain individuals. May be toxic by skin absorption.

Inhalation: Vapours may cause headache, dizziness, respiratory irritation, nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness and muscle spasms. May cause irritation of the respiratory system.

Ingestion: Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness and muscle spasms.

CHRONIC (long term): (see Section 11 for additional toxicological data)
Repeated or prolonged exposure to chlorophenoxy herbicides may cause liver, kidney, gastrointestinal, neurological and muscular effects.

Medical Conditions Aggravated by Exposure: OVEREXPOSURE BY:
Skin absorption may cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness and muscle spasms.

Repeated overexposure may cause damage to liver, kidneys and blood chemistry. Chronic exposure may cause neurological degradation.

Section 4: First Aid Measures

Inhalation: If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a doctor or poison control centre immediately.

Eye Contact: If in eyes splash repeatedly with plenty of clean water. If irritation persists, obtain medical attention or contact a Poison Control Centre.

Skin Contact: If on skin, remove contaminated clothing and wash skin, hair and fingernails thoroughly with soap and water. See a doctor if irritation occurs. Wash contaminated clothing before reuse.

Ingestion: If swallowed - If victim is fully conscious, immediately give a large amount of water to rinse mouth and drink. Never give anything by mouth to an unconscious person. Induce vomiting if a large amount was swallowed. Apply artificial respiration if necessary. Obtain prompt medical attention or contact a Poison Control Centre.

Other: IF POISONING IS SUSPECTED or any symptoms are serious, immediately contact a doctor, the nearest hospital, or the nearest poison control centre. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.



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Section 5: Fire Fighting Measures

<u>Flash Point and Method (°C):</u>	None. Aqueous solution, will not flash.
<u>Flammability Limits (%):</u>	Not applicable
<u>Auto Ignition Temperature (°C):</u>	None
<u>Extinguishing Media:</u>	Use extinguishing media appropriate for the surrounding fire. Dry chemical, water spray, chemical foam, carbon dioxide, water fog.
<u>Unusual Fire and Explosion Hazards:</u>	Sensitivity to Mechanical Impact: Not applicable Sensitivity to Static Discharge: Not applicable
<u>Fire Fighting Instructions:</u>	Firefighters should wear full protective gear including self-contained breathing apparatus when fighting chemical fires. Any water runoff should be minimized and contained.
<u>Hazardous Combustion Products:</u>	Hydrogen chloride, phosgene Thermal decomposition products may include dimethylamine hydrogen chloride and nitrogen oxides. When heated to decomposition it emits very toxic fumes of hydrogen chloride, ammonia, and nitrogen oxides

Section 6: Accidental Release Measures

<u>Air Release:</u>	Not available
<u>Land Spill:</u>	Wear proper protective clothing. Stop further release or spread of contamination with absorbent material. Prevent runoff going into drains, sewers and other waterways. Pump or scoop large amounts of liquid into a disposable container. Absorb remaining liquid or smaller spills with clay, sand or vermiculite. Wash area with detergent and water. On soils, skim off the upper contaminated layer and collect for disposal. Spread the remainder out over a larger area. Check local spill reporting regulations. If herbicide penetrates clothing remove immediately; then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.
<u>Water Spill:</u>	Not available

Section 7: Handling and Storage

<u>Storage Conditions:</u>	Keep from freezing.
<u>Handling Precautions:</u>	Avoid contact with eyes, skin and clothing.
<u>General:</u>	KEEP OUT OF REACH OF CHILDREN. Keep in original container during storage in a well ventilated, cool, dry, area set aside for pesticides. The storage area should be lockable. Do not allow spray, spray mist, visible or invisible vapours or air containing mist or vapours to contact plants other than those being sprayed. Do not store open container near seeds, feeds, fertilizers or pesticides including insecticides, fungicides and weed killers other than those containing 2,4-D or brush killer. Keep separate from other products to prevent cross contamination. Rotate stock. Keep storage area clean and orderly.



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Section 8: Exposure Controls and Personal Protection

<u>Ingredient</u>	<u>Ontario TWAEV</u> <u>(mg/m³)</u>	<u>ACGIH TLV</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u>	<u>U.S. OSHA PEL</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u>
2,4-D, DMA	10	10	10
Mecoprop, DMA	Not established	Not established	Not established
Dicamba, DMA	Not established	Not established	Not established

Engineering Controls: General ventilation normally adequate.

Personal Protection:

Respiratory Protection: Not normally required. Use an approved pesticides respirator if ventilation is not adequate, particularly in hot, non-ventilated spaces.

Skin Protection: Handling the concentrate (mixing and loading): Wear long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes. Coveralls or a chemical-resistant apron should also be worn when open pouring from containers greater than 5 L.
Handling the dilute spray solution (during application or repairing or cleaning equipment): Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes. Gloves are not required during application when operator is in an enclosed tractor.

Eye Protection: Wear safety glasses or a face shield

Work/Hygienic Practices:

Wear freshly laundered clothing and clean protective equipment daily.

- Rinse gloves before removal.
- Wash hands before eating, drinking, using tobacco or using the toilet.
- If herbicide penetrates clothing remove immediately; then wash thoroughly and put on clean clothing. Throw away clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate.
- After using this product, remove clothing and launder separately and promptly. Thoroughly wash hands and exposed skin with soap and water. Follow manufacturer's instructions for cleaning personal protective clothing and equipment. If no such instructions for washables are provided, use detergent and hot water. Keep and wash personal protective equipment separate from household laundry.
- After work, remove all clothing and shower using soap and water.

IDLH (Immediately Dangerous to Life or Health):

The IDLH concentration for 2,4-D is 100 mg/m³.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS: Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

ESCAPE: Gas mask with organic vapour canister and high-efficiency particulate filter; or escape-type SCBA.



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Section 9: Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Clear, amber-brown
Odour Type:	Strong fishy odour
Odour Threshold:	Not available
pH:	8 - 10
Specific Gravity: (water = 1)	1.129 @ 25°C (1.108-1.134)
Boiling Point:	100°C
Freezing Point:	Not available
Viscosity:	Not available
Vapor Pressure: (mm Hg @ 20°C)	Not available
Vapor Density: (Air = 1)	Not available
Solubility in Water:	Product mixes with water (2,4-D 682 mg/L; MCPP 620 mg/L; dicamba 6.5 g/L at 20°C)
Water / Oil distribution coefficient:	Not available
Evaporation Rate: (n-Butyl Acetate = 1)	Not available

Section 10: Stability and Reactivity

Stability:	Stable
Incompatible Materials and Conditions to Avoid:	Acids, caustics, oxidizers, direct sunlight; calcium salts reduce herbicidal activity
Hazardous Decomposition Products:	When heated to decomposition it emits very toxic fumes of hydrogen chloride, ammonia and nitrogen oxides
Hazardous Polymerization:	Will not occur.

Section 11: Toxicological Information

<u>Product</u>	<u>LD₅₀ Oral</u> <u>(mg/kg)</u>	<u>LD₅₀ Dermal</u> <u>(mg/kg)</u>	<u>LC₅₀ Inhalation</u> <u>(ppm, 4 hrs.)</u>
Killex Liquid Turf Herbicide	>5000 (rat)	>2000 (rat)	Not available

Irritancy:	Direct contact is irritating to the eye. May be irritating to skin. Vapours may be irritating to the respiratory system.
Sensitization:	May cause skin sensitization reactions in certain individuals.
Mutagenicity:	Mutagenic effects have occurred in experimental animals.
Teratogenicity:	Not considered teratogenic.
Reproductive Effects:	No reproductive effects have been demonstrated in experimental animals.
Toxicologically Synergistic Products:	None known



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Carcinogenicity:

The table below indicates whether or not each agency has listed each ingredient as a carcinogen.

IARC lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, possibly carcinogenic to humans, based on limited evidence of carcinogenicity in humans.

<u>Ingredient</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>
2,4-D, DMA	A4	2B	Not available
Mecoprop, DMA	Not listed	2B	Not available
Dicamba, DMA	Not listed	Not listed	Not available

ACGIH: (American Conference of Governmental Industrial Hygienists)
A4 – Not Classifiable as a Human Carcinogen

IARC: (International Agency for Research on Cancer)
Group 2B – The agent is possibly carcinogenic to humans

NTP: (National Toxicity Program)

Section 12: Ecological Information

This product is harmful to aquatic invertebrates. Spills into waterways or runoff may adversely affect aquatic invertebrates and non-target plants. Do not apply directly to water or to areas where surface water is present. Do not contaminate water when disposing of equipment washwater. Prevent contamination of groundwater by ensuring that spills are contained during mixing and loading activities.

Section 13: Disposal Considerations

Ontario Regulation 347:

This product would be a subject waste under Ontario Regulation 347 and would have a waste class code of 242B.

Other:

Review federal, provincial and local government requirements prior to disposal.

Do not reuse container.

Follow the following steps for disposable containers:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. 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.

Industrial/commercial waste may be handled at licensed facilities only, and may be disposed of by incineration or burial in an approved site. Waste shipments must be securely packed and properly labelled. Only licensed carriers may be used, and proper documents must accompany the shipment. This product is biodegradable.

In Canada this would be shipped as a dangerous good when sent for disposal. This product is in a form that can release toxic substances through leaching (2,4-D, Dicamba)

Ship as :

Environmentally Hazardous Substance, Liquid, N.O.S. (2,4-D 29%, Dicamba), 9, UN3082, III



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Section 14: Transport Information

Canadian Transportation of Dangerous Goods (TDG)

Not regulated unless shipped for disposal or offered for marine transport.
For marine shipment see IMO classification listed below.
For disposal see Section 13.

TDG Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (2,4-D 29%, Dicamba)
TDG Hazard Classification: Primary: 9
Secondary: None
Product Identification Number: UN3082
Packing Group: III
Control Temperature: None
Emergency Temperature: None
TDG Special Provisions: 16

U.S. Hazardous Materials Regulation (DOT 49CFR)

Not regulated unless shipped in containers exceeding the reportable quantity (45.4 kg of 2,4-D).

DOT Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (2,4-D 29%, Dicamba)
DOT Hazard Classification: Primary: 9
Secondary: None
Product Identification Number: UN3082
Packing Group: III
Reportable Quantity for US Shipments: 2,4-D 45.4 kg (100 lbs.)
Dicamba 454 kg (1000 lbs.)
DOT Special Provisions: 8,IB3,T4,TP1,TP29
DOT Packaging Exceptions: 173.155
DOT Non-bulk Packaging: 173.203
DOT Bulk Packaging: 173.241

IMO Classification:

Environmentally Hazardous Substance, Liquid, N.O.S. (2,4-D 29%), 9, UN3082, III, MARINE POLLUTANT

Marine Pollutants:

2,4-D

ICAO/IATA Classification:

Aviation Regulated Liquid, N.O.S. (2,4-D), 9, UN3334

IATA Packing Instructions:

Passenger/Cargo: 906
Cargo Only: 906
Limited Quantity: ---

Maximum Net Quantity per Package:

Passenger/Cargo: 100 L
Cargo Only: 220 L
Limited Quantity: ---



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Section 15: Regulatory Information

NSNR Status (Canada: New Substance Notification Regulations):

All ingredients are listed, as required, on the Domestic Substances List (DSL).

WHMIS (Canada: Workplace Hazardous Materials Information System):

Status: Not Controlled

WHMIS Classifications: Exempt

NPRI Substances (Canada: National Pollutant Release Inventory):

There are no NPRI reportable substances in this product.

Ontario Reg. 127:

There are no Reg. 127 reportable substances in this product.

TSCA Status (U.S. Toxic Substance Control Act):

All ingredients appear on the TSCA inventory.

Section 16: Other Information

HMIS and NFPA Hazard Rating:

Category	HMIS	NFPA
Acute Health	2	2
Flammability	0	0
Reactivity	0	0

Preparation Information:

Prepared by: LEHDER Environmental Services Limited
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Preparation date: October 3, 2003

Disclaimer: While LEHDER Environmental Services Limited believes that the data set forth herein is accurate, as of the date hereof, LEHDER makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data is offered solely for your consideration, investigation and verification.

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