

IN CASE OF EMERGENCY DUE TO A MAJOR SPILL, FIRE OR POISONING INVOLVING THIS PRODUCT CALL DAY OR NIGHT, 1-800-561-8273 or CHEMTREC 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

- 1.1 **PRODUCT IDENTIFIER:** **REGISTRATION NO. 29277 PEST CONTROL PRODUCTS ACT**
TRADE NAME: SHADOW™ RTM™ EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE
- 1.2 **RECOMMENDED USE:** GROUP 1 HERBICIDE
- 1.3 **MANUFACTURED FOR AND DISTRIBUTED BY:**
 LOVELAND PRODUCTS CANADA, INC.
 PO Box 5234 | 64137 Hwy 543 E • High River, Alberta T1V 1M4
- 1.4 **24 Hour Emergency Phone: (Chemtrec): 1-800-424-9300 (Toll Free) - Additional Emergency Phone 1-800-561-8273**
Loveland Technical Service: 1-800-328-4678

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Combustible Liquid	Category 4	H227
Aspiration Hazard	Category 1	H304
Skin Corrosion/Irritation	Category 2	H315
Eye Damage/Irritation	Category 2B	H320
Carcinogenicity	Category 2	H351
STOT-RE	Category 2	H373

2.2 Label elements



Signal word: DANGER
 Hazard Statement: H227 – Combustible liquid.
 H304 – May be fatal if swallowed and enters airway.
 H315 – Causes skin irritation.
 H320 – Causes eye irritation.
 H351 – Suspected of causing cancer.
 H373 – May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement: P210 – Keep away from heat/sparks/open flames/hot surfaces – No smoking.
 (Prevention): P264 – Wash hands thoroughly after handling.
 P280 – Wear protective gloves/protective clothing/eye protection/face protection.
 P260 – Do not breathe dust/fume/gas/mist/vapours/spray.
 P201 – Obtain special instructions before use.
 P202 – Do not handle until all safety precautions have been read and understood.

Precautionary Statement: P370+P378 – In case of fire: Use carbon dioxide (CO₂), dry extinguishing powder, foam, water fog to extinguish.
 (Response): P301+P310 – IF SWALLOWED: Immediately call a poison centre or doctor/physician.
 P331 – Do NOT induce vomiting.
 P302+P352 – IF ON SKIN: Wash with plenty of soap and water.
 P320 – Specific treatment (see First Aid on the product label).
 P332+P313 – If skin irritation occurs: Get medical advice/attention.
 P362 – Take off contaminated clothing and wash it before reuse.
 P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313 – If eye irritation persists: Get medical advice/attention.
 P308+P313 – If exposed or concerned: Get medical advice/attention.
 P314 – Get medical advice/attention if you feel unwell.



Precautionary Statement:

(Storage): P403+P235 – Store in a well-ventilated place. Keep cool.
P405 – Store locked up.

Precautionary Statement:

(Disposal): P501 – Dispose of contents/container in accordance with local, provincial and national regulations.

2.3 Other hazards

None known.

3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances**3.2 Mixtures**

Chemical Name:	CAS No.	Concentration [%]
Heavy aromatic Naphtha Solvent	64742-94-5	59.6 – 59.9
Clethodim	99192-21-2	26.4 240 g/L
1,2,4-trimethylbenzene	95-63-6	< 5.87
Naphthalene	91-20-3	1.038 – 1.083

Ingredients not listed are proprietary or non-hazardous

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

Ingestion: 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.

Skin contact: 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.

Eye contact: 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.

Inhalation: 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 treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Causes eye irritation. Cause skin irritation. Causes damage to organs. Inhalation may cause: irritation, coughing, shortness of breath. May be fatal if swallowed and enters airways.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-561-8273

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

NOTES TO PHYSICIAN: No specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient. Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Carbon dioxide (CO₂), foam, water fog, dry chemical, or other extinguishing media suitable for the fire.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Combustible liquid. During a fire, may form flammable/explosive vapour-air mixture. Combustion products may include and are not limited to: oxides of carbon, oxides of nitrogen and oxides of phosphorous.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream as it may spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not contaminate water.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Contain or dike spilled material if possible. Should not be released into the environment. Large spills: Dike the spilled material where this is possible. Dig up heavily contaminated soil. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with small quantities of water. Small spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. No open flames. No smoking. Avoid contact with eyes, skin and clothing. Do not breathe mist, spray or vapour. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Do not empty into drains. Handle and open container with care. Use care in handling/storage. Wash before eating, drinking and/or smoking.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Proper grounding procedures to avoid static electricity should be followed. Keep in a fireproof place. Store in original container in a cool well-ventilated place, away from children, animals, food, feed or fertilizers. Keep unused product in resealed original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

Not normally required.

8.2 EXPOSURE CONTROLS:

Engineering Measures

Avoid creating mist or spray. Avoid splashing. Avoid any leak and work in fully closed specially engineered systems. Either local exhaust or general room ventilation is usually required.

OCCUPATIONAL EXPOSURE LIMITS

Components	List	Type	Value
Heavy aromatic naphtha solvent	ACGIH	STEL	10 mg/m ³
Naphthalene	ACGIH	TWA	52 mg/m ³
1,2,4-trimethylbenzene	ACGIH	TWA	123 mg/m ³

Individual Protection Measures:

Eye / Face Protection: Chemical goggles are recommended.

Skin Protection: Chemical resistant clothing is recommended. Routinely wash work clothing and protective equipment to remove contaminants. The use of neoprene gloves is recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment. Wear respiratory protection during operations where spraying or misting occurs. Wear NIOSH-certified air-purifying respiratory protection with an N, P or R95 or HE class filter and organic vapour cartridge if necessary. Wear air supplied respiratory protection if exposure concentrations are unknown or if air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 APPEARANCE : Liquid
- ODOUR: Aromatic.
- ODOUR THRESHOLD: No data available.
- COLOUR: Amber.
- pH: 4.11 (1% solution @ 25 °C)
- MELTING POINT / FREEZING POINT: No data available / 0 °C.
- BOILING POINT: No data available.
- FLASH POINT: 62.8 °C (Closed Cup).
- FLAMMABILITY (solid, gas): No data available.
- UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: No data available.
- VAPOUR PRESSURE: No data available.
- SOLUBILITY: Soluble in hydrocarbon solvents; insoluble in water.
- PARTITION CO-EFFICIENT, n-OCTANOL / WATER: No data available.
- AUTO-IGNITION TEMPERATURE: No data available.
- DECOMPOSITION TEMPERATURE: No data available.
- VISCOSITY: 2.05 cP @ 25 °C.
- VISCOSITY, kinematic: 2.096 cSt (calculated).
- VISCOSITY, dynamic: 6 mPa.s @ 25 °C
- SPECIFIC GRAVITY (Water = 1): 0.96 g/ml
- DENSITY: 0.96 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal conditions. Combustible liquid. May form flammable/explosive vapour-air mixture.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No reactions known under normal use conditions. Will not polymerize.

10.4 CONDITIONS TO AVOID

Open flame. Heat. Overheating. Direct sunlight. Sparks.

10.5 INCOMPATIBLE MATERIALS

Strong bases. Strong acids.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May release flammable gases. Burning produces irritating, toxic and noxious fumes. Oxides of carbon. Oxides of nitrogen. Oxides of Sulphur. Toxic chlorine compounds.

11. TOXICOLOGICAL INFORMATION

11.1 LIKELY ROUTES OF EXPOSURE

Inhalation. Skin contact, eye contact.

LC₅₀ (rat): > 5.40 mg/L (4 HR).

LD₅₀ Oral (female rat): 2920 mg/kg

(male rat): 3610 mg/kg

LD₅₀ Dermal (rabbit): 5000 mg/kg

Acute Toxicity Estimates: No data available

Skin Irritation (rabbit): Irritant

Eye Irritation (rabbit): Irritant

Specific Target Organ Toxicity: May cause damage to organs through prolonged or repeated exposure.

Aspiration: May be fatal if swallowed and enters airways.

Skin Sensitization (guinea pig): Not a sensitizer

Carcinogenicity: Suspected of causing cancer.

Germ Cell Mutagenicity: No data available

Interactive Effects: None known.

12. ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

The product is not classified as environmentally hazardous. Moderately to highly toxic to aquatic organisms.

Clethodim	Bluegill	> 33 mg/L – 96-hour LC ₅₀
	Daphnia magna	20.2 mg/L – 48-hour EC ₅₀
Naphthalene	Rainbow trout	> 0.91 mg/L – 96-hour LC ₅₀
	Daphnia magna	> 1.96 mg/L – 48-hour EC ₅₀

Drift or runoff may adversely affect non-target plants.
 Do not apply directly to water.
 Do not contaminate water when disposing of equipment wash water.
 Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: 39% (Heavy aromatic naphtha solvent).

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: BCF fish 1 >= 427.

12.4 MOBILITY IN SOIL

Migrates to soil.

12.5 OTHER ADVERSE EFFECTS

Assessment: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.



13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Do not reuse containers for any purpose. Container is recyclable, and is to be disposed of at a container collection site. Contact your local dealer/distributor for the location of the nearest collection site. Before taking container to the collection site: Triple or pressure-rinse the empty container, adding the rinsate to the spray tank. Make the empty 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 information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Do not contaminate water, food or feed by storage or disposal.

14. TRANSPORT INFORMATION

14.1 LAND TRANSPORT

TDG Shipping Description: NOT REGULATED

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:	NFPA		HMIS
	1 Health	0 Least	1 Health
	2 Flammability	1 Slight	2 Flammability
	1 Instability	2 Moderate	1 Reactivity
		3 High	X PPE
		4 Severe	

CEPA – Domestic Substances List (DSL): All substances in this product are listed on the DSL or not required to be listed
Hazardous Products Act Information: CPR Compliance: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.
WHMIS Classification: Exempt.
National Fire Code of Canada: Not applicable.

16. OTHER INFORMATION

SDS STATUS: New.

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

PCP (Pest Control Products Act) Registration No. 29277

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