

Material Safety Data Sheet



Dimension* Turf Herbicide

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In case of emergency Call CANUTEC at 613 996 6666

1. Product Identification:**Product name:** Dimension* Turf Herbicide**Product use:** For pre-emergence and early post-emergence control of crabgrass in turf.**Product code number:** 88828**GMID numbers:** 173203**MSDS number:** DASCI-179**Effective date:** February 10, 2006**Supplier:**Dow AgroSciences Canada Inc.
Suite 2100, 450 - 1st Street SW,
Calgary, Alberta,
Canada, T2P 5H1www.dowagro.ca**Date printed:** March 9, 2006**This product is regulated under authority of the Pest Control Products Act****2. Composition:**

Composition	CAS Number	% (w/w)
Dithiopyr	097886-45-8	12.7
Other ingredients		87.3
Including		
Proprietary aromatic solvent	064742-94-5	
Naphthalene ¹	000091-20-3	12.3 ²
Trimethylbenzene ¹	000095-63-6	1.7 ²

¹Contained in proprietary aromatic solvent²As a component of entire formulation**3. Hazard Identification:****Emergency Overview:**

This product is a yellow liquid with a kerosene odor. This product may cause skin and eye irritation. Avoid inhalation of vapor or mists.

Special Health Precautions: This product contains a petroleum-based solvent. Health studies have shown that many petroleum-based solvents pose potential human health risks, which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes of solvents contained in this product should be minimized.

Potential Health Effects:

Eyes: Direct contact with this material may cause eye irritation. Vapor may cause eye irritation experienced as mild discomfort and redness. Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust.

Skin contact: Prolonged or repeated contact may cause skin irritation.

Skin absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Ingestion: Small amounts swallowed incidental to normal handling operations are not likely to

cause injury; however, swallowing larger amounts may cause injury. Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

Inhalation: Excessive exposure may cause irritation to upper respiratory tract (nose and throat). This product may cause central nervous system effects.

4. First Aid Measures:

Eyes: Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first five minutes, and then continue rinsing eyes. Get prompt medical attention.

Skin: Remove contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Get medical attention. Shoes and other leather items, which cannot be decontaminated, should be disposed of properly.

Ingestion: Get medical attention at once. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

Inhalation: Remove person to fresh air. If person is not breathing, then give artificial

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respiration; if by mouth-to-mouth use rescuer protection (pocket mask etc). Get medical attention at once. If breathing is difficult, qualified personnel should administer oxygen.

Note to physician:

If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision to induce vomiting should be made by a physician. This product contains petroleum distillate - vomiting may cause aspiration pneumonia. Maintain adequate ventilation and oxygenation of the patient. There is no specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire-fighting Measures:

Flash point: 63°C (Tagliabue closed cup)

Flammable limits: For solvent, naphtha LFL: 0.8%; UFL: 7.9%

Auto-ignition temperature: Not available

Extinguishing media: Use CO₂, foam, dry chemical or water spray.

Sensitivity to mechanical impact/static discharge: Not available

Unusual fire and explosion hazards:

Combustion generates toxic fumes of the following: nitrogen oxides and carbon oxides. Remain upwind. Contain firefighting water for future disposal.

Fire-fighting equipment: Wear positive-pressure self-contained breathing apparatus and full turnout gear.

6. Accidental Release Measures:

Ventilate the spill area. Avoid breathing vapors. Eliminate all ignition sources. Soak up small spills with absorbent material and store in secure containers until safe disposal can be arranged. Avoid the use of water for cleanup. Do not allow spilled material to contaminate water supplies. For large spills, dike and barricade the affected area and contact CANUTEC at 613 996 6666 and local authorities.

7. Handling and Storage:

Handling: Do not handle this product near food, feed or water. Keep out of reach of children or

animals. Ground all containers when transferring material. Contaminated clothing should be washed separately from domestic laundry and line-dried. Once used for contaminated clothing, the washing machine should be operated through a complete cycle with hot water and detergent only, prior to use for domestic laundry. Users should wash hands and face before eating, drinking, chewing gum, using tobacco or the toilet. Containers are hazardous when empty. Since emptied containers retain product residue (vapors and/or liquid) follow all MSDS and label warnings even after container(s) are emptied. Residual vapors in empty containers may explode on ignition. DO NOT cut, drill, grind or weld on or near container.

Storage: The minimum recommended storage temperature is 4.4°C. Store in a well-ventilated area away from excessive heat sources such as steam pipes heat radiators, etc. and sources of ignition and from reactive materials. Store this product out of direct sunlight in a cool place. Keep container tightly closed when not in use.

8. Exposure Controls, Personal Protection and Exposure Limits:

Exposure limits: Dithiopyr: Dow AgroSciences Industrial Hygiene Guide is 0.25 mg/m³ TWA, 0.75 mg/m³ STEL.

Proprietary aromatic solvent: not available.

Manufacture recommends a TWA of 100 mg/m³ (17 ppm) based on total hydrocarbon content, which has the following constituents: Naphthalene: ACGIH TLV is 10 ppm TWA, 15 ppm STEL, Skin, A4. OSHA PEL is 10 ppm TWA.

Trimethylbenzene: ACGIH recommendation is 25 ppm

Engineering controls: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Breathing: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations, use an approved air-purifying respirator.

Protective clothing: For brief contact during manufacture, warehousing and transport, wear clean body-covering clothing. During operations where direct contact to the concentrated product

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may occur, use protective clothing impervious to this product. Selection of specific items such as face shield, respirator, boots, gloves, apron or full body suit will depend on the operation being carried out. Applicators and other field handlers, including persons repairing or cleaning application equipment, must wear coveralls over clean body-covering clothing, impervious gloves and boots. In addition, persons making and/or transferring field dilutions of this product should wear an impervious apron.

Eyes: Use safety glasses. If exposure causes eye discomfort, use a full-face respirator.

Other protection: None stated

9. Physical and Chemical Properties:

Boiling point: 176 to 210°C for solvent, naphtha

Vapor pressure: 3 mm Hg at 25°C for solvent, naphtha

Vapor density: (Air = 1): 4.8 for solvent, naphtha

pH: 4.1 as aqueous emulsion

Appearance: yellow liquid

Odor: Kerosene

Coefficient of water/oil distribution: not available

Specific gravity: 0.95

Evaporation rate: <1

Solubility in water: emulsifies

Viscosity: 11 cP

Odor threshold: not available

Melting point: not available

10. Stability and Reactivity:

Stability: This product is stable under normal storage conditions.

Incompatibility: Avoid contact with strong oxidizing agents. Avoid ignition sources.

Hazardous decomposition products: None known

Hazardous polymerization: Does not occur

11. Toxicological Information:

Skin absorption: For dithiopyr, acute dermal LD50 is >5000 mg/kg

Ingestion: For dithiopyr, acute oral LD50 is >5000 mg/kg

Inhalation: The maximum practically attainable concentration of this product in the tests (5.98

mg/L for four hours) produced no ill effects in test animals.

Sensitization: Dithiopyr did not cause allergic skin reactions when tested in guinea pigs.

Chronic effects Excessive exposure to the solvent may cause respiratory irritation and central nervous system depression.

Cancer: Dithiopyr did not cause cancer in laboratory animals. The solvent contains naphthalene, which has caused cancer in some laboratory animals. An increase in lung tumors was observed in female, but not male mice exposed to naphthalene by inhalation for two years. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

Birth defects: The solvent did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive effects: No relevant information has been found.

Mutagenicity: For dithiopyr, *in-vitro* genetic toxicity studies were negative. For naphthalene, *in-vitro* genetic toxicity studies were negative in some cases and positive in other cases.

12. Ecological Information:

Dithiopyr is considered toxic to bees and fish, and highly toxic to aquatic invertebrates.

Dithiopyr is slightly toxic to birds on an acute basis, and relatively non-toxic to birds on a chronic basis. Based largely or completely on information for the solvent, bio-concentration potential is high.

Degradation and Metabolism:

Dithiopyr:

Soil/Environment: Half-life of dithiopyr in soil is 17 to 61 days, depending on the formulation type. The major soil metabolites are the di-acid, the normal mono-acid and the reverse mono-acid; these metabolites, themselves, dissipate almost completely within one year. Dithiopyr is stable to soil photolysis.

Animals: In rat, dithiopyr is rapidly absorbed, extensively metabolized and rapidly excreted.

Plants: Not available

Naphthalene- based solvent:

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Based largely or completely on information for the naphthalene based solvent, based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

13. Disposal Considerations:

Unused unwanted product: Contact Dow AgroSciences or your provincial regulatory agency for disposal information.

Container disposal: Refer to the product label for instructions regarding cleaning and disposal of empty pesticide containers. If these instructions are missing or not understood, contact Dow AgroSciences at 800 667 3852 or your provincial regulatory agency for direction.

14. Transport Information:

This product is classified as "Not Regulated" under regulations of the Transportation of Dangerous Goods Act.

15. Regulatory Information:

Pest Control Products Act registration number: 23003

For information phone: 800 667 3852

Master reference: 88828

MSDS status: Revised Sections:

1. Product Identification

Date of last revision: February 19, 2004

16. Other Information:

National Fire Code classification: IIIA

NFPA ratings: Health: 3; Flammability: 2; Reactivity: 0.

Notice: The information contained in this Material Safety Data Sheet ("MSDS") is current as of the effective date shown in Section 1 of this MSDS and may be subject to amendment by Dow AgroSciences Canada Inc. ("DASCI") at any time. DASCI accepts no liability whatsoever which results in any way from the use of MSDS that are not published by DASCI, or have been amended without DASCI express written authorization. Users of this MSDS must satisfy themselves that they have the most recent and authorized version of this MSDS and shall bear all responsibility and liability with respect thereto. Any conflict or inconsistencies as to the contents of this MSDS shall be resolved in favor of DASCI by the most recent version of the MSDS published by DASCI.