

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

Effective Date: 27-Jun-06
Product Code: 106587

DIMENSION* 2 EW HERBICIDE

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Dimension* 2 EW Herbicide

COMPANY IDENTIFICATION:

Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Tan liquid with a faint odor. Eye and skin irritant. Harmful if swallowed or inhaled. Toxic to aquatic organisms.

EMERGENCY PHONE NUMBER: 800-992-5994

3. COMPOSITION/INFORMATION ON INGREDIENTS:

COMPONENT	CAS NUMBER	W/W%
Dithiopyr	097886-45-8	24.0
Cyclohexanone	000108-94-1	13.0
2-Ethylhexanol	000104-76-7	1.9
Toluene	000108-88-3	0.1
Balance		61.0

4. FIRST AID:

EYES: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

INGESTION: Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

INHALATION: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, and then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc.). Call a poison control center or doctor for treatment advice.

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 of whether to induce vomiting or not should be made by a physician. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the safety data sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIRE FIGHTING MEASURES:

FLASH POINT: >212°F (>100°C)
METHOD USED: PMCC

FLAMMABLE LIMITS:

LFL: Not determined
UFL: Not determined

EXTINGUISHING MEDIA: Water fog, foam, CO₂.

FIRE FIGHTING and EXPLOSION HAZARDS: Toxic and irritating gases will be formed if product is involved in a fire.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Absorb small spills with materials such as sand, sawdust, Zorbball or dirt. Wash exposed body areas thoroughly after handling. Report large spills to Dow AgroSciences at 800-992-5994.

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7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors and spray mist. Handle concentrate in ventilated area. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco, using the toilet or smoking. Keep away from food, feedstuffs, and water supplies. Store in original container in a well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where a potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINES:

Cyclohexanone: ACGIH TLV is 20 ppm, 50 ppm STEL; Skin; A3. OSHA PEL is 50 ppm TWA.
Toluene: ACGIH TLV is 50 ppm TWA. OSHA PEL is 200 ppm TWA.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

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

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: organic vapor cartridge with a particulate pre-filter.

SKIN PROTECTION: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full-body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

HAND PROTECTION: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene, Ethyl vinyl alcohol laminate (EVAL). Examples of acceptable glove barrier materials include: Viton, Butyl rubber, Neoprene, Chlorinated polyethylene, Natural rubber (Latex), Polyvinyl chloride (PVC or Vinyl), Nitrile/butadiene Rubber (Nitrile or NBR). Avoid gloves made of Polyvinyl alcohol (PVA). **NOTICE:** The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Tan liquid

ODOR: Faint

DENSITY: 1.001 g/mL

pH: 4.5

10. STABILITY AND REACTIVITY:

CHEMICAL STABILITY: Stable under recommended storage conditions.

INCOMPATIBILITY WITH OTHER MATERIALS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: If product is involved in a fire, oxides of nitrogen, hydrogen fluoride, and oxides of sulfur may be formed along with carbon monoxide and carbon dioxide.

HAZARDOUS POLYMERIZATION: Not known to occur.

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11. TOXICOLOGICAL INFORMATION:

EYE: May cause severe eye irritation. May cause severe corneal injury. Vapor may cause lacrimation (tears). In humans, eye irritation resulted from brief (minutes) exposure to cyclohexanone vapor concentrations of 50 ppm and above.

SKIN: Brief contact may cause moderate skin irritation with local redness. May cause peeling of the skin. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The dermal LD₅₀ for rabbits is >5,000 mg/kg. Has caused allergic skin reactions when tested in mice.

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD₅₀ for rats is >5,000 mg/kg.

INHALATION: No adverse effects are anticipated from single exposure to vapor. The aerosol LC₅₀ for rats is >5.41 mg/L for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For dithiopyr, in animals, effects have been reported on the following organs: liver, kidney, blood, thyroid, adrenal gland, and gall bladder. For cyclohexanone, in animals, effects have been reported on the following organs: central nervous system and spleen.

CANCER INFORMATION: Dithiopyr did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Dithiopyr did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother. Excessive ingestion of 2-ethylhexanol caused birth defects in laboratory animals only at doses toxic to the mother. Occupational exposure to 2-ethylhexanol by the inhalation or dermal routes poses no significant threat to the offspring. Cyclohexanone did not cause birth defects in laboratory animals. In laboratory animals, cyclohexanone has been toxic to the fetus only at doses toxic to the mother. In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation.

REPRODUCTIVE EFFECTS: In animal studies, dithiopyr did not interfere with reproduction. Cyclohexanone caused reduced growth and survival of offspring in an animal reproduction study. Dose levels producing this effect also caused central nervous system effects in parental animals.

MUTAGENICITY: For dithiopyr, in-vitro and animal genetic toxicity studies were negative. For cyclohexanone, in-vitro and animal genetic toxicity studies were negative in some cases and positive in other cases. The majority and most reliable of the many genetic toxicity studies on toluene, both in-vitro and animals, indicate that it is not genetically toxic.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Based largely or completely on information for dithiopyr.

Bioconcentration potential is moderate (BCF is between 100 and 3000 or Log Pow between 3 and 5).

Expected to be relatively immobile in soil (Koc >5000).

Based largely or completely on tested components.

Bioconcentration potential is low (BCF is <100 or Log Pow <3).

Potential for mobility in soil is very high (Koc is between 0 and 50).

DEGRADATION & PERSISTENCE:

Based largely or completely on information for dithiopyr.

No relevant information found.

Based largely or completely on tested components.

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

ECOTOXICOLOGY:

Based largely or completely on information for dithiopyr.

Material is highly toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L in the most sensitive species tested).

Material is practically non-toxic to birds on an acute basis (LD₅₀ is >2000 mg/kg).

Material is practically non-toxic to birds on a dietary basis (LC₅₀ is >5000 ppm).

Based largely or completely on tested components.

Material is practically non-toxic to aquatic organisms on an acute basis (LC₅₀ or EC₅₀ is >100 mg/L in the most sensitive species tested).

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13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities.

This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

If the material as supplied becomes a waste, follow all applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For shipments less than 38,461 pounds by road, rail or vessel:

This material is not regulated for transport.

For shipments greater than 38,461 pounds by road, rail or vessel:

ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.(CONTAINS CYCLOHEXANONE)/9/ UN3082/PG III/RQ (CYCLOHEXANONE)

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:

WARNING: This product contains a chemical(s) known to the State of California to be a developmental toxic. The chemical is toluene (CAS # 000108-88-3).

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Cyclohexanone	000108-94-1	NJ3 PA1 PA3
Toluene	000108-88-3	NJ1 NJ2 NJ3 PA1
2-Ethylhexanol	000104-76-7	PA1

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).

PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Cyclohexanone	000108-94-1	5000 lbs.	13%
Toluene	000108-88-3	1000 lbs.	0.1%

RCRA CATEGORIZATION:

U. S. EPA Hazardous Waste #: Cyclohexanone = U057

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 3, 8, 11, 12, 14 & 15
Reference: DR-0391-7735
Replaces MSDS Dated: 10-Nov-05

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult Dow AgroSciences for Further Information.